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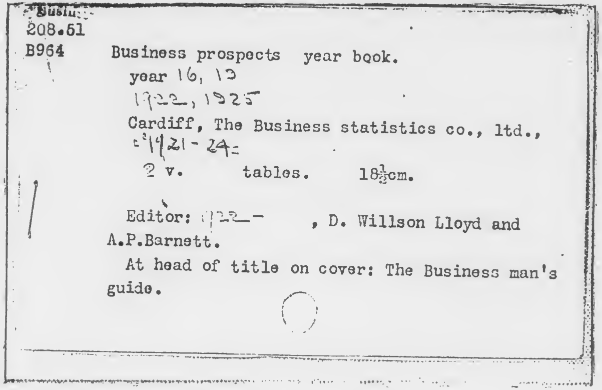

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1922, 1925
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Editor: 1922- , D. Willson Lloyd and A.P.Barnett.

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PREFACE.

THE commercial and industrial outlook of the United Kingdom on the eve of 1922 shows a vast improvement on the outlook twelve months ago. At that time, the country was experiencing the anti-climax of a short period of post-war prosperity when artificially high prices prevailed. When the world's immediate requirements had been met, demand receded, prices fell. The only means of resuscitating demand lay in a considerable pruning of production costs. The year 1921 is therefore memorable as being the painful period of a return of wages and other items of costs to an economic basis.

By the late months of the year, however, prices have been reduced to such a level as to enable British producers to meet foreign competition. Coal, for instance, has fallen from 120s. a ton in the Autumn of 1920 to 25s. a ton at the time of writing. American competition in European markets proved to be a passing episode. Iron and Steel manufacturers, with their reduced costs, can meet competition from Belgium and other producers. Tinplate works have secured several large orders amounting to some thousands of tons. The Cotton trade is healthier owing to the absorption of large stocks and reduction of wages costs.

Thus, just prior to the commencement of the new year, home conditions in the United Kingdom are very much healthier, with great potential productive power. Further reduction in production costs are likely on a revision of railway rates. But, while the economic conditions place this country in a position to compete in foreign markets, the demand from abroad is still at low ebb. Exchange rates fluctuate with great uncertainty, making arrangements for credit a matter of extreme difficulty. Any amelioration in foreign trade can only be effected by improved facilities for credit, and though the Government has given sympathetic consideration to the question by means of export credits and similar measures, these schemes will only to some extent alleviate the position.

The cure depends largely upon solutions being found for the international questions relating to reduction in armaments, national economies, financial sanity in dealing with Germany's reparations, and assistance to Russia to work out her commercial and industrial salvation, and so open up a new vista of opportunity.

As these problems are solved, so will commercial confidence return, bringing with it an increasing demand for goods of all kinds with resultant prosperity. In this prosperity the United Kingdom will share to the full and resume her position as the workshop of the world.

THE EDITORS.

DECEMBER, 1921.

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Section I.

COAL.

COAL.

WHAT ARE THE PROSPECTS OF THE COAL TRADE IN 1922?

Demand will show expansion over previous year.

The surplus productive capacity will be ample to cope with the increased demand.

Output will be larger with increased employment for mine workers.

But supply will still be in excess of demand and will keep prices at low figures.

COAL.

In the halcyon days prior to the Armageddon, sufficient study was not given to the factors that contributed to the prosperity then experienced. It was accepted as the natural order of things, and fluctuations in the degree of prosperity were put down to the operation of the "inexorable law of cycles"—that good and bad trade came in regulated periods. There is much truth in this economic theory, but the factor most responsible for Great Britain's leading commercial position was her command of ample supplies of cheap coal.

The price of British coals extends its influence in so many directions that it is the most important item in the industrial and commercial life of the British Isles. Great Britain's position as a manufacturing nation was built up on a foundation of cheap coal—cheap coal to run her factories, cheap coal to sell abroad in exchange for ores and other raw materials.

Her mercantile supremacy owes its growth to the fact that the large exportable margin of coal provided cargoes for her steamers, enabling them by reason of outward cargoes to bring back food-stuffs and raw materials—in short, to act as the world's sea-carriers.

Such was the position in 1913 when Great Britain was at the culminating point of years of steady commercial development. Then came the War—more than four years of uneconomic conditions and artificial restrictions. The aftermath has extended to to-day; the world's reduced power of consumption is the harvest of the financial exhaustion of most of the countries of the world.

With purchasing power considerably reduced and trade depression in all parts of the world, with social and political upheavals in many countries, demand for British coals has fallen to very low figures, and the re-action of reduced exports has extended in this country to practically all industries which now no longer derive a certain amount of prosperity from war demands. Hence to-day, with unprecedented depression and large numbers of men unemployed, the most important question is: "What expansion, if any, is possible in the exportation of British Coals?"

A general analysis of the position in 1913 is helpful in understanding the changes since that year. At that time the United Kingdom, Germany, France and Belgium represented over 90 per cent. of the European output.

The United States, Australia, India and Japan also held important positions both in the production and the export of coal, but their exports went mainly to markets in which Europe did not compete. The coal output of these four chief European producers and the markets in which it was absorbed in 1913 were :—

Production and Consumption in 1913.

PRODUCTION.		CONSUMPTION.	
Country.	*Tons.*	*Country.*	*Tons.*
United Kingdom	287,000,000	United Kingdom	189,000,000
Germany	192,000,000	Germany	168,000,000
France	41,000,000	France	61,000,000
Belgium	23,000,000	Belgium	27,000,000
		Austria	13,000,000
		Italy	12,000,000
		Norway, Sweden, and Denmark	11,000,000
		Russia	8,000,000
		Holland	8,000,000
		Asia and Africa	8,000,000
		America	8,000,000
		Spain and Portugal	4,000,000
		Switzerland	2,000,000
		Eastern Europe	2,000,000
		Bunker Supplies (in U.K., France and Belgium)	22,000,000
	543,000,000		543,000,000

The United States in 1913 was not a factor in the European coal situation, her exports across the Atlantic being only on a very small scale, the greater part of her surplus being absorbed by Canada.

The position in 1913, as far as the five chief producing countries are concerned was :—

Country.	Production.	Consumption	Surplus.	Deficit.
	Tons.	Tons.	Tons.	Tons.
United Kingdom	287,000,000	189,000,000	98,000,000	—
Germany	192,000,000	168,000,000	24,000,000	—
United States	570,000,000	544,000,000	26,000,000	—
France	41,000,000	61,000,000	—	20,000,000
Belgium	23,000,000	27,000,000	—	4,000,000
			148,000,000	24,000,000

Net surplus 124,000,000 tons.

The cataclysmal effects of the Great War have been fully dealt with in previous issues of the "Business Prospects Year Book." Only a resumé therefore is necessary.

The destruction and damage in the Coalfields of Belgium and northern France, coupled with the cutting off of German exports, enormously reduced European supplies. The withdrawal of large numbers of workers from the British and French collieries aggravated the position. Feverish activity in factories engaged on munitions and other war supplies, especially in the later years of the war, increased home consumption, and with production reduced, the margin available for export was curtailed. France and Italy received special consideration in their coal imports from the United Kingdom; other countries which had previously satisfied the major portion of their requirements by importation from the United Kingdom had perforce to go short.

In the last two years of the War great efforts were made to increase output all over the world, resulting in production approaching the record 1913 figures. After the Armistice a temporary lull came over demand owing to the cessation of the manufacture of munitions and other war supplies and the advent of the transition period before normal conditions could be resumed. Both Europe and America experienced labour troubles resulting in curtailment of output. The result was that in 1920, when the nations of the world again took up their peaceful pursuits, stocks of coal were very low and consumers in all parts, viewing the shortage with a certain amount of apprehension, created abnormal demands resulting in the 1920 production running very close to the year 1913.

But in 1920, the geographical distribution of production had undergone a great change as compared with 1913. The output of the belligerent countries of Europe had, in most cases, shown great decreases. The destruction of the North French mines, the loss of so much man-power, the social and economic upheavals in Europe generally—these contributed to the general decrease. Only Belgium in 1920 had returned to anything like a normal rate of production. Thus there was a great European shortage of coal, and recource had to be made to outside producing areas, as the neutral countries in Europe could only to a very small extent increase their already scanty outputs.

America now came into the field with her wonderful coal resources. Japan, China and India supplied markets in the Far East which had previously been in the hands of Britain. Cargoes even came from the Oceanic continent to Europe, but the United States took the premier position in relieving the European shortage, and not only so, but was able to send large supplies to extra European countries which had previously relied on the output of British mines. There was this great change from 1913, when the output of Europe not only supplied her own needs, but left a surplus for export to other continents, to 1920, when Europe had a deficit and had to rely upon American coal to assist in carrying on her industrial and commercial life.

The change in the coal producing areas as between 1913 and 1920 is illustrated by the following :—

	1913.	1920.	Increase.	Decrease.
	Tons.	Tons.	Tons.	Tons.
Europe	602,000,000	441,000,000	—	161,000,000
America (North) ..	518,000,000	585,000,000	67,000,000	—
Asia	45,000,000	60,000,000	15,000,000	—
Africa	10,000,000	11,000,000	1,000,000	—
Australasia	14,000,000	11,000,000	—	3,000,000

The World's Position in 1921.

The late autumn of 1920 witnessed the commencement of a slump in Europe. Though British coal exports had been reduced, the total requirements of Europe fell considerably, resulting in an abatement in the European demand for American supplies. This continued in 1921, though the stoppage at British mines during the second quarter temporarily checked the downward trend of American trans-atlantic shipments. When, however, production in Great Britain was resumed, the falling off reappeared until, by September, the quantity sent by America to European markets was below 35,000 tons, as compared with an average monthly shipment in 1920 of 200,000 tons. The consuming power of the world is now at a very low ebb. Financial exhaustion has created adverse exchange rates in France, Italy, Germany, etc., Russia is in a state of economic and social lethargy. Trade all over the world is of very small dimensions.

The instability of foreign exchanges is one of the causes of the lack of trade. The day-to-day uncertainty of the exchanges prevents the growth of confidence, which is an essential to the expansion of trade. With rates varying frequently and markets unsteady, it is a matter of difficulty for buyers and sellers alike to arrange large contracts over lengthy periods.

Place.	Parity.	3 Jan.	1 Feb.	1 Mar.	1 Apl.	1 May.
France (Paris) Fc. to £	25·22½	60·50	55·42	53.85	56·05	51·35
Italy (Rome) Lire to £	25·22½	103·00	105·75	106.25	95·75	82·63
Germany (Berlin) Ms. to £	20·43	261	255·5	238	246	262
Portugal (Lisbon) d. to Esco.	53½d.	6¾d.	6½d.	5½d.	5¼d.	5¼d.
Spain (Madrid) Pes. to £	25·22½	26·85	27·43	28·00	28·10	28·40
Argentine (Buenos Ayres) d to £	47 58	50·75	50·00	48·75	46·63	43·00

Exchange Rates, 1921.

Place.	1 June.	1 July.	2 Aug.	1 Sept.	1 Oct.	1 Nov.	25 Nov.
France (Paris) ..	46·38	46·60	46·85	47·57	52·33	53·33	57·25
Italy (Rome) ..	73·75	76·00	83·75	83·75	93·88	96·37	98 13
Germany (Berlin)	245	278·5	293	320	457·5	713·5	1175 0
Portugal (Lisbon)	6¼d.	8d.	7½d.	6¼d.	6d.	5¼d.	4⅝d.
Spain (Madrid)	29·70	28·85	28·00	28·58	28·62	29·37	28·77
Argentine (Buenos Ayres).. ..	45·38	43·88	44 00	43·75	47·75	44·62	44·62

The problem of the exchanges may be resolved into two considerations—political and financial.

(1) World peace is essential for the stabilization of the exchanges, and this involves the question of disarmament, the turmoil in Eastern Europe, civil order and class relations.

(2) International Credits. Every effort must be made to improve national finances. By this is meant national expenditure must be restricted to national revenue. The practice of inflating national currencies by the indiscriminate issue of paper money must be stopped.

This paralysis in the industrial world has had the natural concomitant of greatly reduced coal requirements, so much so that the combined production of the four principal coal-producing countries of Europe shows a shrinkage amounting to over 30 per cent. of the 1913 output.

Production of Chief Countries.

Country.	1913. Tons.	Index No.	1921 Estimate Tons.	Index No.
United Kingdom ..	287,412,000	100	165,000,000	57·4
France	39,413,000	100	23,500,000	59·6
Belgium	22,492,000	100	21,500,000	95·1
Germany	188,091,000	100	122,000,000	64·8
	537,408,000	100	332,000,000	68·8
United States ..	504,525,000	100	502,500,000	99·6

UNITED KINGDOM.

The United Kingdom is the largest producer, and also the largest consumer of coal in Europe, and it is well to examine her position in 1913 to fully appreciate the gigantic change which has come over the industry since that year. Her position in 1913 was :—

	Tons.
Home Consumption ..	189,000,000
Exports	77,000,000
Bunkers for foreign going Steamers	21,000,000
Absorbing her production of	287,000,000

The 77,000,000 tons were sent to destinations all over the world, the chief being :—

	Tons.		Tons.
France	12,776,000	Denmark	3,034,000
Italy	9,647,000	Norway	2,298,000
Germany	8,952,000	Belgium	2,031,000
Russia	5,998,000	Netherlands	2,018,000
Sweden	4,563,000	Brazil	1,887,000
Argentine	3,694,000	Portugal, Azores, and Maderia	1,356,000
Spain and Canaries	3,649,000	Algeria	1,282,000
Egypt	3,162,000	Austria-Hungary ..	1,057,000

The effects of the War on the British coal trade can be summarized as :—

Reduced output owing to large numbers of men serving in H.M. Forces.

Increased home consumption owing to extra demands for war purposes.

Prices regulated by Government.

Exports greatly curtailed; many markets receiving no supplies and special attention being paid to the requirements of France and Italy.

The transition period, *i.e.*, the period following the Armistice in November, 1918, might have been one of large outputs, but the reaction from war-strain and the unrest in the labour world nullified to a great extent the increase that might have been expected from the return of ex-servicemen to the mines. Furthermore, the operation of the seven-hour day from July, 1919, affected output. Home consumption in 1919 was reduced, and, with output slightly in excess of the previous year, the 1918 exportable margin was improved upon.

In 1920, production was practically at the annual rate of 230,000,000 tons. Home consumption received a fillip from greater industrial activity, reducing the quantity available for export. High prices ruled, but the break commenced in November.

The stoppage of the mines in October owing to the men's demand for increased wages marked the turning point. The new wages arrangement based variations of wages on the value of exported coal. But, by March of 1921, prices had fallen to 57s. 6d. for best large Welsh.

		Best large steam coal, f.o.b. Cardiff.	D.C.B. f.o.b. Tyne.
November, 1920	1st Half ..	113/9	Strike.
	2nd Half ..	113/9	135/–
December, 1920	1st Half ..	113/1½	101/8
	2nd Half ..	95/–	81/3
January, 1921	1st Half ..	71/8	61/3
	2nd Half ..	58/9	55/–
February, 1921	1st Half ..	59/6	51/3
	2nd Half ..	58/4½	48/9
March, 1921	1st Half ..	57/6	47/6
	2nd Half ..	57/6	43/9

Poorer results in January, 1921, made a reduction in wages necessary under the scheme then in force. A general trade depression had set in and foreign countries were finding themselves financially embarrassed. The demand for British goods of all classes had fallen away, resulting in home requirements for coal being reduced. Furthermore, the export trade was in a bad state, for, anticipating a stoppage of the British mines, many foreign buyers had laid in large stocks.

The Board of Trade realising that, if anything was to be done, the export trade must be released from the disabilities as to markets, prices and conditions of sale under which it had laboured, this step was taken by The (Coal) Bunkering and Export Prices Revocation Orders and Directions, 1920, but although it was a simple matter to revoke Orders and Directions, it was by no means so easy to re-create foreign demand.

During the first quarter of 1921, there were, however, certain encouraging signs, and exports to some destinations compared favourably with those for the similar period in the previous year.

	1920 (1st Quarter).	1921 (1st Quarter).
Netherlands	123,986	303,788
Spain and Canaries ..	187,418	373,364
British India	169	40,193
Ceylon	5,682	54,006
Italy	878,155	951,732

During the early months of 1921, there was continued unrest amongst coal-mining labour, culminating in a stoppage of the mines at the end of March. Whereas the October, 1920, stoppage was on the matter of increased wages, the 1921 stoppage was in regard to a decrease.

The stoppage was precipitated by the decision of the Government to de-control the industry at the end of March, thus making the coal industry self-supporting. With general trade depression and reduced foreign requirements, it was essential that the price of coal should be reduced, and this could only be effected by a reduction in the wages paid in the coal-mining industry.

Eventually, after a three-months' stoppage, an agreement was reached providing for the future regulation of wages to be based on district profits, and coal production was resumed at the beginning of July. Industrial depression in this country was now at its greatest, foreign outlets for coal were difficult to find, and prices continued their downward trend; by the end of November, the price of best Welsh coal was less than 26s. a ton.

		Best large steam Coal f.o.b. Cardiff.	Best Blyth D.C.B. f.o.b. Tyne.
July, 1921	1st Half ..	48/9	43/9
	2nd Half ..	46/10½	44/4½
August, 1921	1st Half ..	39/4½	35/3
	2nd Half ..	35/3	29/4½
September, 1921	1st Half ..	32/6	29/–
	2nd Half ..	30/10½	29/–
October, 1921	1st Half ..	30/3	27/6
	2nd Half ..	28/6	24/6
November, 1921	1st Half ..	26/6	23/1½
	2nd Half ..	25/9	22/9

In the Autumn of 1921, after the settlement of the stoppage, labour was more amenable and appreciative of the economic position; production was not the difficulty, the problem of the industry being disposal of the output. By August, September and October, however, there were certain encouraging signs in that exports during these months were more than 50 per cent. in excess of any previous month in 1921.

Coal Exports from United Kingdom in 1921.

	Tons.		Tons.
January	1,700,106	June	7,502
February ..	1,729,148	July	816,320
March	1,968,078	August	3,103,207
April	606,548	September ..	3,406,579
May	14,066	October	3,405,972

Trade depression in the United Kingdom also appeared to be lessening. The improvement was not to any considerable extent, but with wages reduced in all industries and other economies effected, British manufacturers were in a better position by October, 1921, to meet foreign competition—more particularly that of Belgium in the iron and steel industries.

The high costs of railway conveyance and shipment are now being seriously considered, and concerted action is leading to reductions, thus enabling further lowering of coal export prices.

Foreign demand is still poor—the financial condition of Europe in particular being bad. Germany is a serious competitor in the French market, and is also supplying neighbouring countries. The United States, too, though not so formidable as a rival, has not entirely disappeared as a factor in the European coal situation. Demand from abroad may be accentuated by Government and other means, *e.g.*, export credits. Until the exchanges are stabilised, only slight improvement in demand is possible.

Thus the year 1921 closes with :—

Reduced colliery costs,

Slight improvement in Home demand,

Concerted action to reduce railway conveyance and dock shipment charges,

Greatly improved power to compete with American coal in foreign markets.

Reduced outputs owing to the flat state of the market,

Foreign demand still poor, but efforts being made to overcome the disabilities caused by the instability of foreign exchange rates.

Home Position.

The position in regard to production and consumption in 1921, as compared with previous years, is :—

Production, Exports and Home Consumption of Coal in the United Kingdom.

Year.	Production.	Exports to France.	Exports to Italy.	Exports to Other Countries.	Exported as Coke and Patent Fuel.	Foreign Bunkers.	Home Consumption.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1913	287,412,000	12,776,000	9,647,000	50,977,000	3,288,000	21,032,000	189,692,000
1914	268,664,000	12,331,000	8,625,000	38,083,000	2,791,000	18,536,000	188,298,000
1915	253,206,000	17,601,000	5,788,000	20,146,000	2,235,000	13,631,000	193,805,000
1916	256,375,000	17,312,000	5,710,000	15,330,000	2,806,000	12,988,000	202,229,000
1917	248,473,000	17,513,000	4,141,000	13,342,000	2,804,000	10,228,000	200,445,000
1918	227,715,000	16,511,000	4,053,000	11,189,000	2,421,000	8,756,000	184,785,000
1919	229,134,000	16,205,000	4,641,000	14,404,000	3,216,000	12,021,000	178,647,000
1920	229,532,000	11,691,000	2,905,000	10,336,000	3,931,000	13,923,000	186,746,000
1921 (1st 9 months.	106,058,000	3,249,000	1,917,000	8,185,000	899,000	7,021,000	88,214,000*

* Including 3,427,000 tons of Imported Coal.

Thus, in 1922, as in the Autumn of 1921, the difficulty will be one of disposal of output and not production. The annual capacity of the mines, both actual and potential, should be nearer 1913 figures. This quantity, however, is not likely to be reached unless unforeseen demands come from foreign buyers. The continuance of trade depression in this country will probably keep home demand down to a requirement of 170,000,000 to 175,000,000 tons. There is thus a large margin available for export. The margin of supplies from the United Kingdom will be sufficient to meet demands from Europe and extra-European countries up to the record figures of 1913, and reference to the succeeding pages will indicate to what extent this margin is likely to be absorbed.

FRANCE.

In pre-war years, France obtained about 30 per cent. of her requirements by importation, the figures relating to 1913, being—

Production (less exports) ..	38,000,000 tons.
Imports from United Kingdom	13,000,000 ,,
Imports from Germany ..	4,000,000 ,,
Imports from Belgium ..	4,000,000 ,,
	59,000,000 ,,

France has always been the best customer for British coals. Her geographical position helps reciprocal trading. During the War years when her own output was seriously

impaired owing to the devastation of the Nord and Pas de Calais coalfields, Great Britain gave her favoured treatment. The effect of the war and her increased British imports can be gauged from the following :—

French Position.

	Output of own Mines. Tons.	Imports from U.K. Tons.
1913	39,413,000	12,776,000
1914	27,316,000	12,331,000
1915	19,588,000	17,601,000
1916	21,132,000	17,312,000
1917	28,459,000	17,513,000
1918	25,888,000	16,511,000
1919	21,709,000	16,205,000
1920	24,890,000	11,691,000

But in 1920 two new factors were introduced into the French coal situation when America, profitting by labour disputes and general coal shortage in Europe, sent large supplies to French ports, and Germany, in accordance with the Peace Treaties, also furnished considerable quantities. The sources of the French coal imports in 1920 were :—

	Tons.
United Kingdom	11,691,000
Germany	5,025,000
United States	2,887,000
Belgium	1,153,000
Other Countries	4,413,000
	25,169,000

France, in common with the rest of Europe, experienced the industrial slump that swept over the world in the Autumn of 1920. Whereas in normal years, French needs absorbed 60,000,000 tons, in 1920 less than 50,000,000 tons were sufficient to carry on her national life.

	Tons.
French Production in 1920	24,890,000
Imports in 1920	25,169,000
	50,059,000
Less Exports	2,361,000
Leaving for Home Consumption	47,698,000

In 1921 the French industrial position grew worse. In spite of greatly reduced prices of import coal, her requirements fell considerably, so that during the first half of that year, the amount available for internal purposes was at the low annual rate of 35 to 40 million tons.

French Position during first nine months of 1921.

	Metric Tons.
Production	17,997,000
Imports from United Kingdom	3,302,000
,, ,, Germany	4,236,000
,, ,, United States	1,083,000
,, ,, Belgium	1,441,000
,, ,, Other Countries	732,000
	28,791,000
Less Exports	1,457,000
French Consumption	27,334,000

The national stoppage at British mines and consequent absence of exports during the second three months of the year account in great part for the lowness of the British quota, and it is interesting to note that in August, September and October the British shipments to France showed great recovery.

British Coal Exports to France.

	1920.	1921.
	Tons.	Tons.
January-June	6,832,105	1,493,943
August	801,893	715,021
September	532,919	846,085
October	745,608	879,149

A decrease took place in the American exports to France.

American Bituminous Coal Exports to France.

	Imports from U.K.	Imports from U.S.A.
	Tons.	Tons.
January-June, 1920	6,832,105	916,689
July-December, 1920	4,858,817	2,629,660
January-March, 1921	1,372,705	235,308
April-June, 1921	121,238	227,982
July, 1921	193,474	110,648
August, 1921	715,021	16,068
September, 1921	846,085	17,045
October, 1921	879,149	*

* October figures not yet available.

German deliveries to France continue at more than 300,000 tons a month.

German Coal Deliveries to France.

	1920.	1921.
	Tons.	Tons.
January	222,000	534,000
February	320,000	478,000
March	350,000	574,000
April	380,000	495,000
May	550,000	426,000
June	942,000	328,000
July	887,000	374,000
August	1,646,000	356,000
September	621,000	602,000

Thus Germany again resumes her place as Britain's most potent competitor, and the temporary competition of America is lessening.

During the coming year, French requirements are likely to be in the region of 48,000,000 tons. Of this, her own mines are likely to provide just over half, leaving approximately 23,000,000 tons to be obtained from outside sources. German deliveries should be between four and six millions, and, assuming that Belgium can furnish about 2,000,000 tons, the balance of roughly 15,000,000 tons must be obtained mainly from the United Kingdom and the United States of America.

The lowness of freights, ample tonnage, and low f.o.b. prices of British coals should result in by far the greater proportion being supplied by Great Britain, but adverse exchange rates may prevent France from satisfying her needs to the full.

ITALY.

The Italian market, next to that of France, affords the greatest interest to British exporters. The United Kingdom pre-war supplied over 80 per cent. of her total imports, the figures for 1913 being :—

From	Tons.
United Kingdom	9,647,000
Germany	919,000
France	165,000
United States	94,000
Other Countries	247,000
making a total of	11,072,000

During the war period the French and German supplies were cut off and Italy was able to make up part of the deficiency by the purchase of American coal.

Trade depression in Italy is acute. The high rate of exchange handicaps her in obtaining a sufficiency of coal supplies. Substitutes, therefore, have been extensively used, such as lignite and peat and other forms of power, such as electricity, which has been obtained from harnessing her rivers and waterfalls. But coal remains the index of her industrial position.

The United States, in 1920, furnished Italy with nearly two-and-a-half million tons as compared with an import of just under three million tons from the United Kingdom. During the first half of 1921, owing probably to the curtailment of British supplies, the United States figures exceeded those of Great Britain.

Imports first six months of 1921.

From—	Tons.
United Kingdom	1,058,399
United States	1,124,067
Germany	1,089,755

The resumption of work at the British Collieries, with greater supplies available for export, enabled British exporters to supply Italy with larger quantities, the figures since the British Coal stoppage being:—

	From U.K.	From U.S.A.
	Tons.	Tons.
July, 1921	77,852	239,187
August, 1921	380,241	87,399
September, 1921	400,991	17,898
October, 1921	474,412	.*

* Not yet available.

The United States is now occupying the third place in satisfying Italian coal needs, as Germany, under the Reparation Treaty, is sending quantities of 150,000 to 200,000 tons a month.

The geographical position of America prevents her re-asserting the position she occupied in 1920, and, unless any unforeseen circumstances arise, the United States will cease to be a deciding factor in the Italian coal situation. The reduced f.o.b. prices of British coals will, to some extent, counteract the disabilities created by the adverse exchange rate, and 1922 will probably witness Italy looking to the United Kingdom for by far the greatest part of her requirements.

Any improvement in the Italian industrial conditions will lead to a corresponding expansion in her British imports so that, assuming her needs to be seven and three-quarter millions, and Germany able to supply one-and-a-half to two millions, it would appear that about five million tons will be required from the United Kingdom.

BELGIUM.

A feature of 1920 was the rapid recovery of Belgium towards the pre-war average monthly production of 1,900,000 tons. The level of production in 1921, however, has fallen somewhat behind 1920 for the same reasons that repressed output in other countries.

Belgium Coal Output.

	1920. Metric Tons.	1921. Metric Tons.
January	1,869,640	2,041,010
February	1,683,750	1,778,000
March	2,006,160	1,800,040
April	1,900,750	1,712,490
May	1,737,080	1,592,420
June	1,887,235	1,700,480
July	1,911,490	1,776,580
August	1,856,070	1,839,940
September	1,909,050	1,876,390
October	1,966,580	—
November	1,633,990	—
December	2,051,740	—
	22,413,535	

In 1913, Belgium's home requirements more than absorbed her production (less exports), necessitating ten million tons being imported. The position was :—

1913.	Metric Tons.
Production	22,858,000
Imports	10,760,000
	33,618,000
Exports	6,980,000
Home Consumption ..	26,638,000

The imports came mainly from :—

Germany	7,000,000
United Kingdom ..	2,000,000
France	1,000,000

Of her exports, nearly 5,000,000 tons were sent to France.

During the first six months of 1921, the position was as under. The figures for the first six months of 1920 and the entire year 1920 are also given for purposes of comparison :—

Belgian Position in 1921.

	1921 (1st half)	1920 (1st half)	1920.
	Tons.	Tons.	Tons.
Belgian Production ..	10,453,000	11,079,000	22,053,000
Imports from U.K. ..	41,000	529,000	671,000
,, ,, Germany ..	1,409,000	188,000	1,173,000
,, ,, U.S.A. ..	22,000	128,000	274,000
	1,472,000	845,000	2,118,000
Total Production and Imports	11,925,000	11,924,000	24,171,000
Less Exports	3,655,000	715,000	2,086,000
Home Consumption ..	8,270,000	11,209,000	22,085,000

In 1921, German deliveries had an important bearing on the Belgian coal market. With reduced consuming power, Belgium was able to export more than she received, thus reversing her pre-war position. France, Italy and Switzerland constitute her chief markets, the greater part of her surplus being absorbed by France. Taking into account her own productive capacity and the German Reparation deliveries, it is unlikely that, in 1922, she will require any considerable quantity from the United Kingdom.

Belgian Coal Imports from United Kingdom.

FIRST NINE MONTHS :	Tons
1913	1,547,000
1920	612,000
1921	175,000

SCANDINAVIAN COUNTRIES.

In 1913, the Scandinavian Countries (Norway, Sweden and Denmark) imported—

2,298,000 tons into Norway.
4,563,000 ,, ,, Sweden.
3,034,000 ,, ,, Denmark.

During 1920, with British available supplies at a minimum, these countries purchased quantities of coal from America, and even China and Australia. Now that British supplies are reverting to the normal, the imports from countries other than the United Kingdom will probably be negligible.

Exports from United Kingdom to Scandinavian Countries.

To	Average Monthly, 1913.	Average Monthly, 1920.	August, 1921.	September 1921.	October, 1921.
Norway	191,529	66,743	103,312	91,521	91,341
Sweden	380,256	114,373	160,089	215,884	204,398
Denmark	252,853	86,675	287,110	226,393	260,919
	824,638	267,791	550,511	533,798	556,658

U.S.A. Exports (Bituminous) to Scandinavian Countries.

To	Monthly Average, 1920.	June, 1921.	July, 1921.	August, 1921.	Sept., 1921.
Norway	61,356	—	—	12,487	—
Sweden	103,923	5,189	—	10,394	—
Denmark	80,554	43,824	20,621	3,887	—
	245,833	49,013	20,621	26,768	Nil.

The decline in American shipments to Europe and the recovery in the British export trade are clearly emphasized.

Demand is much below normal, as Scandinavia is no exception to the general state of depression, and her 1922 requirements will not reach the level of pre-war years.

SOUTH AMERICA.

Not only have the United States failed to retain their hold on European markets, but they are also being overtaken in the important South American trade.

American Exports.

To	1913.	1st half, 1920.	2nd half, 1920.	1st half, 1921.	3rd quarter, 1921.
	Tons.	Tons.	Tons.	Tons.	Tons.
Chile	—	142,172	351,949	144,760	4,000
Brazil	280,000	370,742	594,277	382,260	95,355
Uruguay	17,000	92,250	175,957	64,057	24,333
Argentine	70,000	638,816	1,079,677	425,608	179,006
	367,000	1,243,980	2,201,860	1,016,685	302,694

Side by side with the above export figures of coal shipped from the United States to South America, it is interesting to compare the exports of coal from the United Kingdom to the chief South American States during the same periods.

United Kingdom Exports.

	1913.	1st half, 1920.	2nd half, 1920.	1st half, 1921.	3rd quarter, 1921.
	Tons.	Tons.	Tons.	Tons.	Tons.
Chile	589,000	1,969	5,153	12,085	2,240
Brazil	1,887,000	114,484	43,660	25,189	107,834
Uruguay	724,000	83,047	34,433	68,002	62,842
Argentine	3,694,000	183,479	90,189	226,243	330,979
	6,894,000	382,979	174,435	331,519	503,895

These figures represent very striking increases in the volume of the British export trade with South America in 1921, especially when it is taken into account that April, May and June were idle months at British collieries.

In the second half of this year, there are indications that Great Britain's proportion of South American supplies will be still further increased.

United Kingdom Exports.

To.	July, 1921.	August, 1921.	September, 1921.	October, 1921.
Chile ..	122	186	103	1,951
Brazil ..	Nil.	40,520	47,741	19,753
Uruguay	3,949	20,947	41,895	—
Argentine	26,865	116,134	103,053	111,792

These compare with the United States shipments as under :—

United States Exports.

To	July, 1921.	August, 1921.	September, 1921.
Chile	1,523	1,022	1,455
Brazil	27,525	43,419	24,411
Uruguay	24,333	Nil.	Nil.
Argentine	97,512	47,835	33,659

The Panama Canal gives the United States an advantage in Chile.

American exporters are leaving no stone unturned to increase facilities for exporting to South America, and improve their unloading arrangements at the ports of delivery, but the United Kingdom, favoured by experience of this market and low c.i.f. prices should regain her pre-war proportion of coal deliveries to South America, though a great improvement is necessary in those countries to bring demand to anything near the 1913 mark.

THE NETHERLANDS.

In pre-war years, Great Britain used to supply the Netherlands with 2,000,000 tons of coal annually. Germany's quota was 7,000,000 tons. The position during the years 1919-1921 has been

Imports of Coal into the Netherlands.

Eight Months ended August.

From	1919.	1920.	1921.
	Tons.	Tons.	Tons.
United Kingdom ..	268,352	149,867	628,791
United States ..	266,830	523,456	494,639
Germany	392,257	774,037	827,538
Belgium	1,065,741	16,136	1,023,845
South Africa	Nil.	15,908	10,762
Canada	4	171,301	56,473
Other Countries ..	88	71	8,103
Total	1,993,272	1,650,776	3,050,151

Thus Holland has been able to do with far less than her pre-war requirements, and with any trade improvement the United Kingdom should increase her quantities, as the United States coalfields are too far off for effective competition. Germany's surplus after the fulfilment of her Reparation obligations will hardly permit of much increase on her present scale of exports to Holland.

OTHER MARKETS.

In practically every market in the world the United States furnished large supplies during 1920, but the early months of 1921 show a falling off—checked temporarily in the second quarter of the year by the British coal stoppage, but recontinued in August to a marked extent.

British shipments, however, show great expansion during the autumn months.

Exports (Bituminous) from U.S.A.

TO	Average Monthly 1920.	Jan. 1921.	Feb. 1921.	Mar. 1921.	April, 1921.
Spain	5,490	3,212	14,048	800	8,405
Azores & Madeira	3,970	6,228	3,461	1,543	8,234
Portugal	13,701	2,457	—	—	11,683
Canary Islands	5,023	—	—	—	58,508
Greece	19,278	—	8,404	7,610	—
French Africa	19,846	15,978	8,509	8,130	37,212
Portuguese Africa	2,702	—	—	—	27,824
Eygpt	52,210	78,637	50,439	68,748	57,734

TO	May, 1921.	June, 1921.	July, 1921.	Aug., 1921.	Sept., 1921.
Spain	24,316	3,616	3,478	650	—
Azores & Madeira	21,997	22,943	16,199	—	—
Portugal	35,548	40,478	10,013	—	—
Canary Islands	42,260	53,473	15,250	2,806	—
Greece	13,040	7,244	49,994	9,832	—
French Africa	39,468	16,212	16,509	13,797	—
Portuguese Africa	9,721	10,833	10,804	—	—
Egypt	79,378	42,619	36,994	21,399	5,916

Thus, there is an indication of the " passing out " of the United States.

Exports from United Kingdom.

TO	Average Monthly, 1913.	July, 1912.	August, 1921.	Sept., 1921.	Oct., 1921.
Spain	211,177	35,958	116,992	110,854	120,900
Azores and Madeira	12,863	—	—	2,911	3,116
Portugal	100,143	22,721	80,778	86,250	53,686
Canary Islands	92,719	13,722	18,427	34,149	19,598
Greece	60,658	4,414	18,524	65,737	29,393
French Africa	—	—	3,714	2,818	4,024
Portuguese Africa	—	5,916	14,248	21,544	6,707
Egypt	*263,540	49,258	114,825	87,488	115,159

* Including Anglo Egyptian Soudan in 1913.

The expansion in British Coal exports will continue at a rate corresponding to the return to normality of conditions.

THE UNITED STATES.

The total production of coal in the United States in 1920 approached the records reached in the war years, 1917 and 1918.

Production of Coal in U.S.A.

Year.	Bituminous.	Anthracite.	Total.
	Short Tons.	Short Tons.	Short Tons.
1912	450,105,000	84,362,000	534,466,000
1913	478,523,000	91,525,000	570,048,000
1914	422,704,000	90,821,000	513,525,000
1915	442,624,000	88,995,000	531,619,000
1916	502,520,000	87,878,000	590,098,000
1917	551,791,000	99,612,000	651,403,000
1918	585,883,000	99,473,000	685,356,000
1919	458,069,000	70,000,000	528,069,000
1920	552,933,000	85,260,000	638,193,000

But in November, the export trade began to fall off and home consumption was at the same time reduced. The effect is apparent in the table of monthly production. It is estimated that the production of coal in 1921 will be down to the level of the years which preceded the War.

Monthly Production (Bituminous and Anthracite).

	1920. Short Tons.	1921. Short Tons.
January	63,680,000	57,418,000
February	46,517,000	38,673,000
March	48,526,000	34,112,000
April	41,029,000	41,024,000
May	54,409,000	43,380,000
June	47,042,000	37,393,000
July	58,270,000	43,796,000
August	51,631,000	37,058,000
September	49,226,000	38,093,000
October	69,247,000	58,922,000
November	53,524,000	
December	55,135,000	

Prior to 1920 the amount of bituminous coal exported to Canada and other foreign countries averaged 4 per cent. of the total output of the United States mines. 1920 was a record year for exports, the proportion increasing to 7 per cent. of the output. Total exports of 17,975,090 tons in 1919 increased to 34,390,430 in 1920.

The largest increases were to European countries :—

American Coal Exports.

Destination.	Gross Tons. 1919.	Gross Tons. 1920.
France	532,222	3,646,349
Italy	1,632,995	2,387,734
Netherlands	722,190	2,146,947
Belgium	200	274,575
Denmark	88,903	966,649
Egypt	37,543	626,530
Finland	—	27,883
Greece	48,120	231,336
Gibraltar	20,293	82,341
Norway	159,843	736,270
Portugal	45,178	164,414
Sweden	252,891	1,247,080
Switzerland	528,575	812,332
Spain	18,623	65,883

Exports to South America were more than doubled.

Argentine	453,389	1,718,493
Brazil	644,109	965,019
Chile	93,618	494,121
Uruquay	194,997	268,207
Other States	65,847	67,581
	1,451,960	3,513,421

The exports from America to Canada increased by nearly 4 million tons.

	1919.	1920.
Canada	10,670,490	14,482,929

Eclipse of America in European Markets.

An outstanding feature of 1921 has been the eclipse of America in the coal markets of Europe. Taking into account the reduced consumption of coal in America, it might have been expected that increasing quantities of coal would be shipped to Europe. Such has not been the case. In the first place European countries have required comparatively small supplies. That little has been furnished, with few exceptions, by near-by countries at prices below the American price.

American Exports.

	1st half 1920.	2nd half 1920.	1st half 1920.	3rd quarter 1921.
France	936,689	2,709,660	463,290	143,761
Italy	1,458,309	929,425	1,124,067	344,484
Netherlands ..	816,998	1,329,949	250,869	83,221
Norway	174,463	561,807	29,297	12,487
Sweden	320,407	926,673	52,946	10,394
Denmark ..	221,909	744,740	128,445	24,508
Spain	54,021	11,862	54,357	4.128
Portugal ..	45,361	119,053	90,167	10,013
	4,028,157	7,333,169	2,193,438	632,996

Events have fully justified the prediction made a year ago—". . . There is every probability that as normal conditions re-obtain and British coalfields are able to meet the demands of Europe, the United States will find, as in pre-war days, that the additional cost of conveying coal across the Atlantic, places them at such a disadvantage that they are unable to compete."

But the American competition in European markets must not be dismissed too lightly.

The imports of important European countries from America, though not up to 1920 standards, when trade was prosperous, are nevertheless considerable in proportion.

American Competition.

The foregoing examination of markets conclusively shows how America is falling behind in the struggle for the European coal trade. Few fresh contracts are being placed, and what coal is being delivered to Europe is being shipped on account of standing contracts.

Best quality American coal ranges round \$5·50–\$6, which represents 28/– to 30/7 per ton (at exchange of 3·92¾.

	$	s.
Pennsylvania Best Steam	5·50 to 6·	.. 28/– to 30/7
Pocahontas New River Best	5·10 to 5·40	.. 25/11 to 27/6

The latest American freight rates (end October, 1921) across the Atlantic are :—

	Dollars.	English Equivalent (Exchange at 3·92¾)
Brest and other Atlantic French Ports	3·75 to 4·00	.. 19/1 to 20/4
Amsterdam-Rotterdam	3·25 to 3·50	.. 16/7 to 17/10
Venice-Trieste ..	4·50 to 4·75	.. 22/10 to 24/2
Copenhagen	4·25 to 4·50	.. 21/7 to 22/10
Marseilles	4·00 to 4·75	.. 20/4 to 24/2
Genoa	4·00 to 4·75	.. 20/4 to 24/2
Constantinople ..	4·75	.. 24/2

It is clear that, with such freights reigning, America has no chance of securing European markets. These freights contrast with the following from the United Kingdom at end October, 1921 :—

Brest	8/–	Copenhagen ..	7/4½
Amsterdam ..	8/6	Algiers	12/–
Rotterdam ..	8/6	Marseilles ..	13/–
Venice	16/4½	Genoa	13/3
Trieste	15/–	Constantinople ..	17/6

Coal freights from the United Kingdom to the River Plate have recently increased to about 19/6 per ton. Reckoning 25/9 per ton for best coal to South America, this makes a total price of 45/3 per ton. Taking five to six dollars as the export price of American coal (*i.e.*, 25/5 to 30/7 and adding a freight charge at the rate of four dollars (20/4) per ton, a final figure 45/9 to 50/11 is arrived at. Thus the advantage in South American markets still remains with the United Kingdom, although adjustments in American prices would quickly put this trade on a competitive basis, as regards the United States and the United Kingdom.

GERMANY.

German production during the eighteen months ended June, 1921, has been as follows :—

Production of Coal and Lignite in Germany, 1920-21.

Month. 1920.	Coal.	Lignite.	Total, Coal and Lignite.
	Tons.	Tons.	Tons.
January ..	10,329,000	8,643,000	18,972,000
February ..	10,225,000	8,464,000	18,689,000
March	10,150,000	7,920,000	18,070,000
April	10,035,000	8,900,000	18,935,000
May	10,224,000	8,705,000	18,929,000
June	11,008,000	9,572,000	20,580,000
Total Half-Year	61,971,000	52,204,000	114,175,000
July	11,509,000	9,235,000	20,744,000
August	10,788,000	9,651,000	20,439,000
September ..	11,550,000	10,103,000	21,653,000
October ..	11,870,000	10,493,000	22,363,000
November ..	11,814,000	9,839,000	21,653,000
Deecmber ..	11,926,000	10,110,000	22,036,000
Total Half-Year	69,457,000	59,431,000	128,888,000
Total Year 1920	131,428,000	111,635,000	243,063,000
1921.			
January ..	12,008,655	10,070,794	22,079,449
February ..	12,008,647	10,039,156	22,047,803
March	11,459,663	9,876,367	21,336,030
April	8,985,305	10,373,239	19,358,544
May	7,796,926	9,367,954	17,164,880
June	8,688,284	10,055,302	18,743,586
Total Half-Year	60,947,480	59,782,812	120,730,292

A feature of recent production in the mining industry of Germany since the war has been the increased output of lignite

Germany's Exports.

It is not easy to form an estimate of Germany's export trade, in the absence of regular statistics. The figures of German exports in the period 1913-1918 were as follows. The production in those years is included for purposes of comparison.

	*Production.	*Exports.	Per Cent.
1913	188,091,000	34,041,961	18·1
1914	158,650,000	26,819,925	16·9
1915	156,444,000	16,584,116	10·6
1916	164,316,000	18,812,714	11·5
1917	157,921,000	14,978,345	9·5
1918	114,583,000	12,745,811	11·1
1919	105,122,000	8,428,230	8·1
1920	129,433,000	22,238,234	17·1

* Excluding Lignite.

It is estimated that Germany's production of coal in 1921, will amount to about 120,000,000 tons, of which she will export about 12 millions tons.

Of this latter quantity the distribution may be expected to be somewhat as follows :—

France	6,500,000
Belgium	1,250,000
Italy	2,000,000
Other Countries ..	2,250,000
	12,000,000

In all probability Germany is able to export a couple of million tons per annum to neighbouring countries, after making delivery to the Entente.

While British coal prices have been falling, German prices have been increasing. The following are the prices of some of the chief classes of Rhine coal :—

Class.	April, 1920.	April, 1921.	Sept., 1921.
	Marks.	Marks.	Marks.
Bituminous (Thro') ..	215·40	247	254·90
Coking Coal	202·20	231·80	—
Gas (Thro')	224·80	257·80	—
Dry (Thro')	202·20	231·80	246·20
Anthracite (Nuts) ..	298·10	342·40	332·80

German Competition.

Reference to the Table of German prices will make an exact appreciation of German competition on the Continent possible. The German mark is quoted (Nov 25th) at about 1,175 marks to the £ sterling. It will thus be seen that the United Kingdom is at a great disadvantage in coping with German competition.

However, signs are not wanting of an improvement in the position of the United Kingdom in this matter. A rise in German miners' wages, dating from the 1st September, and the continued depreciation in the German exchange will almost certainly bring about an increase in German coal prices. The withdrawal of the supplementary shift in the Ruhr coalfield will increase production costs, and the increase in the Coal Tax will have the effect of sending up German prices, and to some extent reducing the competitive power of Germany.

The transference of a portion of the Upper Silesian coalfield to Poland will be a severe blow to Germany, and affect Germany's position as an export country very materially.

PROSPECTS FOR 1922.

The year 1921 has witnessed many important events having a direct influence upon the European coal situation.

So far as Great Britain is concerned, the decline in f.o.b. prices of all classes of coal, which commenced in November, 1920, continued throughout the year. The Strike in the second quarter of the year accelerated the fall. With demand from foreign consumers only absorbing a small part of the potential export surplus, prices have fallen to below one quarter of the mid-summer 1920 prices, many collieries were closed down, and others are working short time.

In the United Kingdom, though severe industrial depression continues, there are healthy signs of improvement, and this improvement will be assisted by the Government plans, but chiefly by the cheapness of industrial coal.

Clause 12 of the Agreement in settlement of the April-June coal stoppage in the United Kingdom appears to preclude the possibility of extended labour trouble in 1922. The Clause reads :—

> "The period of duration of this agreement shall be from the date of resumption of work until September 30th, 1922, and thereafter until terminated by three months' notice on either side."

Exports from the United Kingdom during the Autumn months show a considerable advance upon those for the early months of the year, but part of this expansion may be accounted for by the fact that foreign stocks which had been somewhat depleted during the stoppage period are now being replenished.

The monthly exports of coal from the United Kingdom this year compare with the average of 1913 and the highest and lowest figures for 1920 as under :—

Average monthly exports from the United Kingdom in 1913 ..	6,116,676
Highest month, 1920 (January) ..	3,358,572
Lowest month, 1920 (November) ..	1,360,724
January, 1921	1,700,106
February, 1921	1,729,148
March, 1921	1,968,078
August, 1921	3,103,207
September, 1921	3,406,579
October, 1921	3,405,972

The part played by the United States in the European coal market was only an episode, and her influence is waning.

In the past export trade has not played an overwhelming part in the coal industry of the United States, and an expansion in her home industries would leave little coal to spare for the needs of foreign countries. On the other hand, the productive capacity of America must be kept well in mind. America is the largest coal producing country in the world, with a capacity for producing more than 700,000,000 tons per annum. It is estimated that she has facilities for exporting 25,000,000 tons per year, not taking into account exports to Canada. However, the position at present is that the American coal export trade is flat. Mine prices have already been cut as low as possible and reductions in miners' wages are being stoutly resisted. A dispute on a scale comparable with the national coal stoppage in the United Kingdom is said to be imminent.

The high f.o.b. prices of American export coal are maintained largely owing to the high railway rates from the coalfields to the seaboard. Freight charges are $2·80 per ton to Hampton Roads, as compared with $1·40 per ton in the pre-war days. American exporters are demanding a reduction to at least about $2·00.

With these difficulties, coupled with shipping freights, complicating the American issue, it seems unlikely that a considerable expansion in the American export trade will occur.

Germany's first thought must be to deliver the quantities of coal due under the Reparation scheme. The fact that France, Italy and Belgium are receiving substantial supplies from Germany in the shape of indemnity prejudices the position of the United Kingdom. Over and above these deliveries, Germany is taking a prominent part in supplying the coal requirements of her neighbours, but it must be remembered that, in 1913, when British exports were 73,400,118 tons, Germany exported 34,041,961 tons.

The requirements of France are expected to expand. French production is reduced by something like 40 per cent., so that, allowing for German deliveries, it is still probable that France will turn to the United Kingdom for increasing supplies in 1922.

Already Italy is increasing her imports from the United Kingdom. This country seems best situated to meet Italian needs, and an expansion in the British Italian trade is anticipated in 1922.

There is also reason to believe that the United Kingdom will continue to supply increasing quantities of coal to the South American countries.

Besides these principal markets, a steady increase in exports to the numerous smaller markets, which in the aggregate are no less important than the larger buyers, is to be expected.

The year 1922 will probably be one when competition will not be the important factor, the chief question being that of demand. The difficulties of adverse exchange rates, the financial crippling of many countries, making purchases practically impossible on credit unless assisted by Government means, the breaking up of the social and economic fabric in parts of Europe—these account for the lowness of demand.

Commercial confidence is essential before trade on a large scale is possible, and the Government assistance by means of export credits, etc., will alleviate the present situation, but will hardly cure it. Great Britain will, during the coming year, re-assert her position as the leading factor in European markets, and the expected improvement in Europe industrially will result in increased demands, though this improvement is likely to be slow and gradual.

In 1922, however, the supply of coal will be ample to meet all calls. Any increase in demand will be met without affecting price considerations owing to the coalfields not producing to their full.

The price of coal, therefore, is likely to remain at low figures.

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Section II.

SHIPPING.

SHIPPING.

WHAT WILL BE THE COURSE OF FREIGHTS IN 1922?

A large expansion in World's trade is necessary to absorb the surplus tonnage.

Trade recovery, because of reduced purchasing power, will be slow, and absorption of the tonnage now laid up can therefore only be gradual.

Freights will remain on a low basis, but reductions in working costs will improve the position for shipowners.

SHIPPING.

It is estimated by reliable authorities that the surplus merchant tonnage, as measured by the quantity laid up in the ports of the world, is in the region of 10,000,000 tons. That is the actual position at the present time (November, 1921), and what the shipowner, and, in fact, everyone interested in this most vital of all industries to Great Britain, is most anxious to know is, how soon this surplus will be absorbed by world's trade, and shipping again be a profitable proposition.

Before this question can be answered it is necessary, in the first place, to examine the several factors which contributed to bring about this position.

The sharpness and severity of the shipping slump is accounted for by the fact that the decline in world's trade came about at the time when the out-turn of new merchant tonnage in this and other European countries was at its highest. Whilst the United States had cut down her shipbuilding programme from nearly $3\frac{3}{4}$ million tons at the end of the War to not much more than two million tons at June, 1920, the European curve was still on the up grade. The tonnage under construction in this country at the end of September, 1920, amounting to 3,731,098 tons, was greater than it had ever been before, and Holland, Italy, France, and the Scandinavian countries were all producing at their maximum. The years 1918 and 1919 saw the fruition of the efforts of the United States and Japan to assist the Allies by producing merchant tonnage to replace the losses by submarine, whilst the efforts of the European Allies themselves quite naturally showed the best results in the two years subsequent to the War.

The enormous increase in the tonnage launched during 1918-20, as compared with previous years, may be gauged from the fact that during these three years the total addition to the world's merchant navies by new construction amounted to practically 18½ million tons. The figures for United Kingdom and Abroad compared with previous boom periods are as follows :—

Merchant Tonnage Launched in the World.

Year.	United Kingdom.	Abroad.	Total.
	Tons.	Tons.	Tons.
1900	1,442,000	862,000	2,304,000
1901	1,525,000	1,093,000	2,618,000
1902	1,428,000	1,075,000	2,503,000
1905	1,623,000	892,000	2,515,000
1906	1,828,000	1,092,000	2,920,000
1907	1,608,000	1,170,000	2,778,000
1911	1,804,000	846,000	2,650,000
1912	1,739,000	1,163,000	2,902,000
1913	1,913,000	1,420,000	3,333,000
1917	1,163,000	1,775,000	2,938,000
1918	1,348,000	4,099,000	5,447,000
1919	1,620,000	5,525,000	7,145,000
1920	2,056,000	3,806,000	5,862,000

The statistical position of the world's tonnage at June, 1921, as compiled by Lloyd's Register of Shipping, shows that the total sea-going steel and iron steam tonnage owned by the principal maritime countries at that date amounted to 54,217,000 tons, or an increase of 11,703,000 tons over the 1914 total of 42,514,000 tons. The participation of each country is as follows :—

Sea-going Steel and Iron Steam Tonnage owned by the Principal Maritime Countries.

COUNTRY.	June, 1914.	June, 1921.	Difference between 1921 and 1914.
	Tons gross.	Tons gross.	Tons gross.
United Kingdom	18,877,000	19,288,000	+ 411,000
British Dominions ..	1,407,000	1,950,000	+ 543,000
America (United States) ..	1,837,000	12,314,000	+10,477,000
Austria-Hungary	1,052,000	*Nil.*	— [illegible]
Denmark	768,000	866,000	+ 98,000
France	1,918,000	3,046,000	+ 1,128,000
Germany	5,098,000	654,000	— 4,444,000
Greece	820,000	576,000	— 244,000
Holland	1,471,000	2,207,000	+ 736,000
Italy	1,428,000	2,378,000	+ 950,000
Japan	1,642,000	3,063,000	+ 1,421,000
Norway	1,923,000	2,285,000	+ 362,000
Spain	883,000	1,094,000	+ 211,000
Sweden	992,000	1,037,000	+ 45,000
TOTAL ABROAD ..	23,637,000	34,929,000	+11,292,000
WORLD'S TOTAL ..	42,514,000	54,217,000	+11,703,000

European Position.

It will be seen that the major portion of this increase is accounted for by the United States, the European position being :—

INCREASES—	
United Kingdom ..	411,000
France	1,128,000
Italy	950,000
Holland	736,000
Norway	362,000
Spain	211,000
Denmark..	98,000
Sweden	45,000
	3,941,000
DECREASES—	
Austria-Hungary ..	1,052,000
Germany	4,444,000
Greece	244,000
	5,740,000
NET DECREASE—Europe ..	1,799,000

World's Position.

Taking the world as a whole, the increase of nearly 11½ million tons is largely surplus tonnage at the present time, but in view of the existing industrial depression and the consequent falling off in overseas trade, it is remarkable that the surplus is not greater. In this connection, it is interesting to quote Sir Frederick Lewis, chairman of Furness, Withy & Co., Ltd., at the annual meeting of that company. He said " A study of the statistics recently published by " Lloyd's Register of Shipping " shows that of the total world's steam tonnage of 54,217,000 gross tons, there is, eliminating wooden vessels altogether, 11,703,000 gross tons of shipping afloat more than there was in 1914, notwithstanding the tonnage lost during the war. The approximate increase that would have occurred normally during this period of seven years is 15,000,000 gross tons—that is, on the assumption that there had been no war and no substantial increase in the shipbuilding plants of the United States. It will, therefore, be seen that there has been no over-production in the ordinary sense of the expression. Furthermore, these figures include a number of old vessels which, in the ordinary course of events, would have passed into the shipbreakers' hands long ago, and which have only been kept in service owing to the fact that during the War any seaworthy vessel, however old, could find employment. It is fairly safe to say that these vessels will never again be put into commission unless under exceptional circumstances, as the cost of repairs and surveys would exceed their value when completed. Vessels on the register of over 25 years of age represent 5,757,175 gross tons, of which 4,055,847 are owned abroad and 1,701,328 are owned in the United Kingdom. If for the purposes of estimating the effective world tonnage these are disregarded, we arrive at an increase of 5,945,825 gross tons over 1914. Of this increase, however, 2,940,000 gross tons are represented by the increase in bulk oil carriers, and while to some extent these may displace coal-carrying, for ordinary general purposes of the world's trade, it may be said there are, in effect, only 3,005,825 gross tons more of serviceable vessels afloat to-day than there were in 1914. Notwithstanding these figures, there is laid up in the world's ports an amount of tonnage which was recently estimated at round about 10,000,000 tons. It follows, therefore, that the principal cause of the decline in freights is due not so much to the over-production of tonnage as to the falling off in the world's overseas trade, and, so far as shipowners are concerned, I can only see one practical thing to be done, and that is to reduce operating costs to such a level as will help forward a revival of international trade."

Shipbuilding at Home.

The course of shipbuilding in the United Kingdom has naturally moved in sympathy with the shipping position, the tonnage under construction showing a heavy decline quarter by quarter during the past twelve months.

Although the slump set in about the middle of 1920, its effect on shipbuilding was not shown until the last quarter of that year. The tonnage under construction, which reached the high water mark of 3,731,000 tons at September 30th was reduced to 3,709,000 tons by December 30th, 1920. Since the latter date, the figures of the tonnage under construction are not a true indication of the position, as they include a considerable quantity of tonnage upon which work has been suspended. At

September 30th, 1921, the tonnage building amounted to 3,282,972 tons, or a reduction of 247,000 tons compared with the previous quarter, but in order to get a true comparison, it is necessary to deduct 731,000 tons representing tonnage upon which work has been suspended owing to the decline in demand and 457,000 tons, the completion of which has been postponed owing to abnormal causes. These two totals amount to 1,188,000 tons (equal to 36 per cent. of the tonnage under construction) leaving a figure of 2,095,000 tons as representing the tonnage actually under construction, or a reduction of 44 per cent. in twelve months. The following are the comparative figures at the end of September during the past four years :—

Quarter ended	Tons.
Sept., 1918	1,746,933
,, 1919	2,816,773
,, 1920	3,731,098
,, 1921	*2,095,000

* Actually under construction.

Lloyd's Register draw attention in their quarterly returns to the important fact that, although the quantity of tonnage under construction is still so large, the amount completed compares very unfavourably with pre-war times. In 1913, the average tonnage completed during each quarter was over 23 per cent. of the total work in hand at the beginning of the quarter, but for the first three quarters of 1921, this figure has fallen as low as 8½ per cent.

Naturally, the quantity of new tonnage laid down has consistently declined since the collapse of the boom; the tonnage commenced during the quarter ended September only amounted to 51,343 tons, as compared with 593,821 tons during the corresponding quarter of 1920.

Comparative figures of vessels launched and commenced are given hereunder :—

Quarter Ended	Vessels Launched.	Vessels Commenced.
September 30th, 1918	256,984	344,971
September 30th, 1919	404,714	711,312
September 30th, 1920	483,057	593,821
September 30th, 1921	307,850	51,343

Shipbuilding Abroad.

The total merchant tonnage building abroad at September 30th, 1921, was 2,260,000 tons, including 375,000 tons upon which work has been suspended (mainly in Italy and the United States of America), leaving 1,885,000 tons actually under construction. This is less than half the tonnage under construction abroad twelve months ago, the biggest reduction being in the case of the United States, whose total shipbuilding now amounts to 433,962 tons, as compared with 1,772,193 tons at September, 1920, and 4,185,523 tons at March, 1919.

The following table shows the merchant tonnage under construction abroad at the end of September during the past four years :—

Tonnage under Construction.

Country.	Sept., 1918.	Sept., 1919.	Sept., 1920.	Sept., 1921.
United States ..	3,382,709	3,470,748	1,772,193	433,962
Holland	204,530	288,042	423,400	349,122
Italy	132,770	*285,928	*365,313	397,544
France	39,700	174,736	292,608	350,681
Spain	71,317	90,705	89,390	75,017
Sweden	83,871	101,217	121,849	86,646
Norway	77,609	83,941	90,794	77,339
Denmark	51,153	68,074	116,063	82,233
Greece	—	1,500	1,500	600
Belgium	—	7,063	27,970	25,335
Portugal	12,347	(*a*) 12,320	2,590	17,496
Japan	260,875	299,600	262,407	186,782
China	6,292	39,470	51,844	15,505
Brazil	—	—	2,258	2,170
British Dominions	301,281	308,456	213,894	144,460
Other Countries ..	—	—	—	15,115
	4,624,454	5,231,809	3,834,073	2,260,007

* Including Trieste.
(*a*) These figures refer to work in hand at end of June, 1919.

It will be seen that the leading countries abroad, other than the United States of America, are Italy, with 397,544 tons, France, 350,681 tons, Holland, 349,122 tons, and Japan 186,782 tons.

As an indication of the tremendous expansion in the oil industry, it is interesting to record that there are 140 steamers and motor-vessels each of over 1,000 tons, with a total tonnage of 931,813 tons under construction in the world for the carriage of oil in bulk. Of the total, 81 of 527,991 tons are building in the United Kingdom, and 28 of 222,292 tons in the United States of America. The development of the internal combustion engines for marine propulsion purposes is indicated by the fact that the tonnage of vessels under construction which are to derive their power from this source amounts to no less than 405,941 tons.

Shipping Prospects.

Coming now to the prospective demand for tonnage during the ensuing twelve months, an examination of the United Kingdom trade returns show that both imports and exports have fallen off to an alarming extent. The effects of the Coal Strike of October 1920, and the thirteen weeks strike of 1921, have been very severe to the shipping industry in the loss of carrying trade. The following figures show the exports of coal, coke and patent fuel, including bunkers :—

		Tons.
1913 (nine months)	..	72,444,000
1919 (nine months)	..	38,174,000
1920 (nine months)	..	33,833,000
1921 (nine months)	..	21,271,000

The labour unrest and almost continuous agitation for increased wages and shorter hours of working, subsequent to the War, have been largely responsible for the present industrial depression. The vicious circle of increasing wages to meet the higher cost of living, resulting in a still further rise in foodstuffs and all materials, went on until the collapse came. Largely attributable to the reaction from the war, men wanted high wages and short working hours. The fallacy of under-production has now, however, been pretty well exploded, and by the

signs of the times, labour will soon have learnt its lesson (if it has not already done so), that without production there can be no wealth.

No matter what section of the carrying trade from and to these islands is examined, practically all tell the same tale of severe decline in volume of goods handled. The exports of iron, steel, cement, chemicals and textiles are all far below even those of 1920. Imports of iron ore, iron and steel, timber, paper making materials, and all heavy trades are only a small proportion of the normal international trade. Some examples are given hereunder :—

EXPORTS.

Iron and Steel and Manufactures (including Machinery).

			September. Tons.		Nine months ending September. Tons.
1913	..	..	445,000	..	4,265,000
1920	..	..	293,000	..	2,867,000
1921	..	..	169,000	..	1,533,000

Cement.

			September. Loads.		Nine months ending September. Loads.
1913	..	..	51,693	..	587,353
1920	..	..	50,575	..	454,496
1921	..	..	22,349	..	231,282

IMPORTS.

Iron Ore.

			September. Tons.		Nine months ending September. Tons.
1913	..	..	529,000	..	5,774,000
1920	..	..	487,000	..	5,195,000
1921	..	..	89,000	..	1,425,000

Iron and Steel Manufactures.

	September. Tons.	Nine months ending September. Tons.
1913	176,000 ..	1,618,000
1920	103,000 ..	702,000
1921	206,000 ..	1,187,000

Pitprops or Pitwood.

	September. Tons.	Nine months ending September. Tons.
1913	479,000 ..	2,585,000
1920	187,000 ..	1,460,000
1921	158,000 ..	839,000

Wood Pulp.

	September. Tons.	Nine months ending September. Tons.
1913	99,257 ..	695,113
1920	94,372 ..	836,696
1921	63,660 ..	399,912

If any such evidence were needed, it will be gathered from the figures given above that the trade of the world has to expand very considerably before the available tonnage will be absorbed. One of the chief obstacles to this desirable end, is the question of the International Exchanges. Until the position of the debtor countries improves, with a consequent betterment of Exchange, any improvement in international trade is bound of necessity to be very gradual.

Tonnage Inwards and Outwards.

The figures of the tonnage entered and cleared United Kingdom ports with cargoes give a very fair indication of the state of the carrying trade from and to these Islands. The latest figures are as follows :—

	Entered (with Cargoes).	Cleared (with Cargoes).
September, 1921 ..	3,400,165 ..	4,103,575
,, 1920 ..	3,269,321 ..	3,016,720
,, 1913 ..	4,621,781 ..	5,794,753
Nine Months ended Sept., 1921	27,495,869 ..	24,389,472
Nine months ended Sept., 1920	27,022,311 ..	27,630,643
Nine months ended Sept., 1913	36,429,715 ..	50,383,096

It will be seen that, whilst the tonnage both inwards and outwards in the month of September shows an increase upon the corresponding month of last year, there is a decrease in the former case compared with September, 1913, of over 26 per cent., and in the latter of nearly 30 per cent. The tonnage of vessels entered with cargoes during the first nine months of this year, notwithstanding the abnormal trade depression, is actually greater than for the similar period of 1920, but is only 75 per cent. of the 1913 inward trade. The most significant figures, however, are those showing the tonnage cleared. During the first nine months, these are over 3,000,000 tons below the 1920 figures, and less than half those of 1913 !

The elimination of the pre-war German Liner service between United States of America and the Continent, calling at United Kingdom, together with the three months' coal strike, discount these figures to a certain extent, but nevertheless they indicate very clearly the degree to which the world's overseas trade has declined.

Summary.

It is established that the volume of oversea traffic has fallen considerably below the capacity of existing tonnage, and until the difficulties of trade as between country and country, owing to adverse exchanges and low purchasing power have been reduced, that freedom of international commerce so essential to the restoration of prosperous industrial conditions, and the rehabilitation of shipping, cannot be achieved.

The favourable factors in the situation are that costs of production in every industry are coming down, and the Government, at last alive to the critical condition of trade in this country, are seeking by every means in their power to assist a revival of world's trade. A practical workable exports credit scheme backed by the Government will go far to achieve this object.

The prospects of the iron and steel industry in this country are also distinctly brighter than they have been for some time past; the big drop in the cost of coal and labour will help to place British steel makers in a position to compete with Continental producers.

After the labour upheaval of the last few years, it is probable that there is a period of comparative tranquility before this country.

There are, therefore, bright spots in the business man's firmament, but as far as it is possible to form an opinion

upon the position as it is to-day—one practically without precedent—the next twelve months will be difficult ones in the shipping industry, with freights at round about the cost of running the boat, every improvement in freights bringing out some of the surplus tonnage which is now laid up.

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Section III.

COTTON.

COTTON.

WHAT ARE THE PROSPECTS OF COTTON IN 1922?

Supplies of raw cotton will be sufficient to meet the requirements of users, but owing to the small crops in America and Egypt reserves will be reduced.

It is probable that prices for the raw material and manufactured goods will be higher than in the closing months of 1921, with an improved demand.

COTTON.

Throughout the past year the cotton industry of Great Britain, which, of course, is centred in Lancashire, has been in a state of severe depression. Owing to the absence of fresh business, spinners and manufacturers have been compelled to allow a large amount of machinery to stand idle, and as a result unemployment in all sections has been on an extensive scale. There has, undoubtedly, been a serious reaction from the boom conditions which prevailed in the early part of 1920. A marked feature of the position of affairs has been the steady depreciation in values throughout the first half of the year. During that period, manufacturers and merchants who held stocks had to encounter severe losses. Foreign exchange rates have been very unfavourable, and, owing to delay in remittances from abroad and the refusal of customers to accept deliveries, financial stringency has been acute. Considering what has happened, Manchester traders can congratulate themselves that so few failures have been reported. Some raw cotton merchants in Liverpool have been brought down, and cases of difficulty have had to be dealt with in Manchester, but no big failure has taken place, although from time there have been distinct fears of financial trouble. At the end of the summer there was a decided rise in values in raw cotton rates, and since then very active trading has taken place in New York and Liverpool. The higher level of values has been a means of saving many firms from disaster as stocks of manufactured goods have appreciated in value to a considerable extent. A feature of the year has been the official opening by His Majesty the King of the reconstructed and enlarged Manchester Royal Exchange. The floor space has been increased from 4,000 to 7,000 square yards, and the Exchange is now the largest of its kind in the world.

The American Crop.

The following table gives the average price of middling American cotton, and also the extent of the American crop for the past ten years :—

FLUCTUATION IN PRICES—1911-1921.

	Average Price per lb.	Crop.
1911-12 ..	6·09d. ..	16,138,000 bales.
1912-13 ..	6·76d. ..	14,167,000 ,,
1913-14 ..	7·27d. ..	14,610,000 ,,
1914-15 ..	5·22d. ..	15,067,000 ,,
1915-16 ..	7·51d. ..	12,938,000 ,,
1916-17 ..	12·33d. ..	12,941,000 ,,
1917-18 ..	21·68d. ..	11,907,000 ,,
1918-19 ..	19·73d. ..	11,603,000 ,,
1919-20 ..	25·31d. ..	12,443,000 ,,
1920-21 ..	11·89d. ..	11,355,000 ,,

At the beginning of 1921, the price of American cotton in Liverpool was about 10d. a lb. Values tended to ease, and early in March rates were round 6½d. a lb. A rather steadier feeling then prevailed and up to the end of June there was not much change. A few weeks later prices began to advance, and early in August users had to pay 9d. a lb. The market became much stronger, and by the end of September values were round 15d. per lb. The higher rates were not maintained, and late in November the price was about 12d. The output of American cotton during last season did not quite come up to anticipations, the yield being 11,355,000 bales.

Below is given a table showing statistics relating to the cotton crop in the United States for the past four seasons :—

Cotton Crop in United States.

	1920-21.	1919-20.	1918-19.	1917-18.
	Bales.	Bales.	Bales.	Bales.
Receipts at the Ports ..	7,088,492	7,299,667	6,735,898	6,406,129
Overland to mills and Canada, net	1,465,385	1,674,828	1,528,262	1,699,057
Southern Mills takings, net	2,823,439	3,468,685	3,338,840	3,831,787
Total crop	11,377,316	12,443,180	11,603,000	11,906,973

The Egyptian Crop.

At the beginning of 1921 the price of Egyptian cotton was about 21d. per lb. Before the end of February, however, rates had fallen to 13d. per lb. There was a rise in March to 17½d. per lb., and the higher figures were maintained during April. After a decline to 15½d. at the end of August, an upward movement began to show itself, and by the end of September the price was round 28d. Early in October, over 30d. per lb. had to be paid, but there followed an easier movement, and at the end of November the price was round 21d. The Eygptian crop for the season was of fair extent, the production being 4,876,500 cantars.

The following table gives the average price of Egyptian cotton, and the extent of the crop for the past ten years :

FLUCTUATION IN PRICES—1911-1921.

	Average Price per lb.	Crop.
1911-12	9·9-16d.	7,424,208 cantars
1912-13	9·79d.	7,532,920 ,,
1913-14	9·45d.	7,684,172 ,,
1914-15	7·34d.	6,463,726 ,,
1915-16	10·42d.	4,726,518 ,,
1916-17	21·56d.	5,126,199 ,,
1917-18	30·97d.	6,315,841 ,,
1918-19	27·85d.	4,820,660 ,,
1919-20	60·34d.	5,642,560 ,,
1920-21	30·24d.	4,876,500 ,,

British Manufactures.

The experience of spinners and manufacturers during the past twelve months has been worse than for many years back. It has not been a case of no profit for producers, for all firms have had to report serious losses. This state of affairs has been due to the big fall in values. As is usual in a declining market, buyers have refused to operate and from month to month a very dragging state of affairs has been experienced. Owing to the output of the machinery being more than sufficient to meet the requirements of customers, the spinning mills and weaving sheds have had to run shorter hours, and in all factories a large amount of machinery has had to be stopped. The operatives have felt the situation very severely, and in some parts of Lancashire the distress has been rather alarming. Manufacturers of piece goods have had to contend with an absence of fresh business, and many merchants abroad have declined to take the delivery of goods when ready for shipment.

Foreign Markets.

With regard to India there has been a big controversy between the native dealers and Manchester merchants as to the basis on which remittances should be made. Numerous firms on the other side have refused to pay for goods except on the basis of 2s. to the rupee, whereas the real exchange value has been in the region of 1s. 4d. most of the year. This question has been discussed on several occasions by the Manchester Chamber of Commerce, and the Chamber has pressed members not to grant any concessions to customers. In the circumstances, fresh buying has been of retail dimensions, and now a troublesome feature relating to India in the boycott of foreign cloths has arisen. Mr. Gandhi is conducting an active agitation, and there are fears that the political situation in our Dependency may get worse before it is better. Stocks in the bazaars have been reduced, and, owing to there being an excellent Monsoon season, the trade outlook has recently improved, but merchants are afraid to commit themselves to deliveries of importance. The China market has also felt to a serious extent the decline in values, and many difficulties have been experienced in effecting satisfactory clearances. It must be said, however, that merchants in Shanghai have done everything possible to meet their obligations, and contracts have only been cancelled as a result of mutual arrangements. The South American markets have been adversely affected by the unsatisfactory position of exchange, and perhaps on the whole the healthiest outlets have been those in the Near East, although for that part of the world trade has been anything but brisk. Owing to the excellent summer weather, clearances in light fancy materials in home trade circles have been favourable, but the wholesale houses have to carry substantial stocks and all the leading firms have lost a lot of money.

Spinning Trade.

Spinners of yarn have done just as badly as manufacturers of cloth. It has been quite impossible to sell the output of the machinery, and in both the American and Egyptian sections short time working has had to be resorted to. In October, 1920, spinners of Egyptian cotton decided as a body to run the mills only 35 hours a week instead of the usual 48. In the following December members of the Masters' Federation who use American cotton resolved to restrict the output by running only 24 hours a week. This organised curtailment of production continued until last July. At that time a few firms booked more orders and the Masters' Federation, after giving the matter consideration, decided to allow the members to work their mills as they thought fit. Since then, however, production has not been by any means at full stretch, and the workpeople have earned comparatively small wages throughout the year.

There has, of course, been a considerable drop in yarn prices, especially during the first half of 1921.

Last January spinners were obtaining about 24d. per lb. for 32's American twist. In the middle of March, they were glad to accept 16½d. A little later, there was a slight improvement, and prices advanced in sympathy with the rise in the raw material. In July the quotation was round 18d., and at the end of November the price was about 19d.

With regard to Egyptian yarn, the quotation for 60's twist at the beginning of last January was 36d. There was a drop to 25d. by the middle of March, followed by a hardening movement to 32d. at the end of April. The tone was steady for several weeks, but September brought higher figures, and the price at the end of November was 33d. Users have been content to purchase small lots to meet urgent requirements, and on very few occasions has there been any speculative buying. Of course, as a result of the large stoppage of looms the consumption of yarn has been much reduced. During the last few months there has been a welcome improvement in the demand for yarns suitable for shipment abroad. The increased activity has been led by China, and a large trade has been done, especially in two-fold qualities. More buying has also taken place for the Near Eastern outlets, and there are now indications of freer operations for India.

The following is a table of shipments of yarn and cloth from Great Britain for the past ten years :—

EXPORTS OF YARN AND CLOTH FROM GREAT BRITAIN—1912-1921.

Year.	Yarn. lbs.	Value in £.	Cloth. yds.	Value in £.
1912	243,954,000	16,223,235	6,912,625,800	91,628,953
1913	210,175,500	15,007,017	7,075,558,400	97,820,623
1914	178,527,800	11,973,056	5,735,854,700	79,182,763
1915	188,178,700	10,312,934	4,748,904,600	64,702,574
1916	172,192,800	13,432,761	5,255,503,900	88,793,778
1917	133,153,400	17,708,035	4,979,076,900	112,787,619
1918	101,793,700	21,409,710	3,695,772,100	138,521,491
1919	162,665,500	33,911,554	3,528,756,500	178,955,943
1920	147,542,900	47,824,983	†4,436,557,500	315,733,164
1921	109,237,400	18,619,754	†2,208,752,600	112,334,364

* Ten months. † Square yds.

Labour in the Industry.

The industry has been saved from serious labour disturbances. The wages agreement which was entered into by the employers and the operatives in all sections of the trade in May, 1920, has been loyally observed. Owing to the trade depression the masters' organisations lost no time in seeking a reduction of wages in May last when the agreement expired. On behalf of both spinning and weaving employers a claim was sent to the trade unions for a reduction in wages of 95 per cent. on list rates, which meant a fall in current wages of 6s. in the £. Several joint conferences were held between the two sides, but progress towards a settlement was not rapid. The notices of the masters expired on June 4th, and just previous to that date a big effort was made to arrange a compromise. The masters modified their demand to 80 per cent. on list rates, but the operatives refused to accept

anything more than a reduction of 50 per cent. on list rates. Owing to the failure of the negotiations the lock-out took effect. The Ministry of Labour intervened, and the negotiations were resumed. Long conferences were held, and on June 15th a provisional agreement was come to. It provided for an immediate reduction on list rates of 60 per cent., or 3s. 10d. in the £ on the then wages, with a further reduction of 10 per cent. on list rates, or 7d. in the £ on the then wages, to come into force on January 1st, 1922. The terms were submitted to mass meetings of the workpeople, and in certain quarters there was strong opposition to the agreement. There was a little delay in ratifying the terms, but ultimately the officials of all the organisations affected signed the agreement, and work in the spinning mills and weaving sheds was resumed after a stoppage lasting three weeks. The agreement was for six months, and, therefore, expires on December 31st, 1921, but if at that time either side desires a further change in wages, it will be necessary for three months' notice of any alteration to be given, so wage rates are really fixed until the end of March, 1922. Owing to organised short time in the spinning mills, and a large number of looms standing idle in the weaving section, unemployment has been very pronounced. The funds of the trade unions have been depleted by the big amounts which have had to be paid to the out-of-work operatives.

Cotton Growing within the Empire.

Further progress has been made during the year with regard to the development of cotton growing in various parts of the British Empire. The British Government promised to vote £50,000 a year for five years towards the expenses of the Empire Cotton Growing Corporation. Owing to certain developments in another direction this scheme has been altered. During the war the British and Egyptian Governments controlled the buying and selling of Egyptian cotton in Egypt. Profits amounted to the big sum of £4,000,000. Half of this money will be retained by the Egyptian Government, and of the other £2,000,000 which comes to the British Government it has been decided that £1,000,000 shall be handed over to the Empire Cotton Growing Corporation, in place of the proposed grant of £50,000 a year for five years.

Prospects for 1922.

The industry has been in a state of depression for over eighteen months. Recently there has been a distinct improvement in the amount of business offering. Buyers of yarn and cloth have been stimulated to place orders on a freer scale as a result of the decided rise in raw material rates. Spinners and manufacturers have been forced to put up their quotations, but in very few instances have producers been able to secure the full rise necessary to meet the increased production costs. Owing to customers in all parts of the world not having bought anything worth mentioning since the spring of 1920, there is ground for believing that in the near future stocks will have to be replenished. There are still unfavourable factors, such as the restriction of credit and the irregularity in exchange rates, but during the last few months the marked appreciation in the value of stocks of manufactured articles has, undoubtedly, eased the position of merchants and manufacturers.

The prospective supply of raw cotton is a serious matter for all interested in the cotton trade. Farmers in the United States seem determined to secure higher prices for their produce than have prevailed during the last year or two. In the spring of 1921 the area under cotton was reduced by nearly 30 per cent. The plants during the season did very badly and owing to hot dry weather the yield will be very small. The damage from insect pests is increasing from year to year, and some authorities are of opinion that, owing to this trouble, it will never be possible again for America to produce an output of anything like 15,000,000 bales. According to the information so far available, the yield for the present season will be about 8,000,000 bales, including linters. The quality of the material is also poor, and there is likely to be a scarcity of the higher grades. This factor in the situation is important for Lancashire. For some time consumption has been restricted as a result of the large amount of spinning machinery standing idle, but there are now signs of a trade revival. It remains to be seen what will be done by farmers in the United States in the Spring of 1922 with regard to acreage, but planters now realise that it is possible to secure more money in the aggregate for a small yield than for a big output.

The authorities in Egypt have decided to continue to limit the area under cotton, and the crop during the last few months has not done at all well. It is probable that the production for 1921-22 will be smaller than for many years back, and it is estimated that the growth will not be more than 3,400,000 cantars.

There is every probability of Lancashire manufacturers of cotton piece goods doing much better in 1922 than during the past year. Inquiry recently has been of much larger dimensions, and there is a tendency for order lists to be extended. In most distributing centres throughout the world supplies are comparatively small. Most countries, of course, are poorer than in pre-war times, and consumers of cotton cloths will be compelled to practice economy. It is believed, however, that in most quarters for many months there has been a tendency to go short and, as in some directions this policy has been overdone, it is reasonable to anticipate freer buying.

With regard to the chief markets abroad, the political situation in India causes anxiety. Mr. Gandhi is carrying on an active agitation against foreign goods, and undoubtedly he is meeting with some success. It must be remembered, however, that the mills in India are only in a position to supply about 50 per cent. of the requirements of the natives, so sooner or later goods will have to be obtained from other sources. The agricultural season in our Dependency has been excellent in every respect, and apart from political matters the trade outlook for India is healthy. Some improvement has recently occurred in the reports from China and the several minor outlets of the Far East. Stocks of dear

goods have been reduced, and many dealers have placed orders with Lancashire manufacturers on a freer scale. It is likely that this business will develop to a further extent. In the Near East also, trading conditions are more satisfactory, and improvement is now taking place in South America. Throughout Europe, apart from Russia, business is reviving, if only slowly.

Spinners of yarn, of course, cannot do well, unless there is an active demand for cloth. During the past eighteen months the consumption of twist and weft has been very seriously curtailed as a result of the large stoppage of looms. As there is every likelihood of a better state of affairs in the weaving section, some improvement is bound to be experienced in the yarn department. Business recently has broadened, a feature of interest being the increased activity in qualities suitable for shipment abroad. Extensive contracts are now held by spinners for China, and more demand is being met with for India and Continental countries.

The coming year is not likely to be passed through without some labour difficulties, but the relations of the employers and the trade union officials are not unsatisfactory, and it is expected that any difficulties which may arise will be settled amicably. The present wages agreement provides for no further change in wages until after the end of March next. Unless there is a big improvement in trade by that time, the masters will certainly move to obtain a further reduction. It is held that Lancashire spinners and manufacturers cannot compete against foreign rivals unless labour charges are lowered in the future. It is quite impossible to anticipate what may happen in this respect, but the Lancashire operative is a reasonable person, and there is not likely to be any serious trouble. On several occasions it has been suggested that wages should be based on a sliding scale according to the state of trade and the cost of living, but so far the employers and the workpeople have not been able to arrange a satisfactory scheme.

During the last few months, a fresh basis of prices has been established not only in raw cotton, but also in yarn and cloth. Values are distinctly dearer than in July last. In trade circles the opinion is held that lower rates in the near future are improbable. Supplies of the raw material this season will be much less than the consumption and stocks will have to be reduced to meet the deficiency. It is not likely that growers in different parts of the world will be eager to plant a larger area next spring, and there is ground for believing that the damage from insect pests will increase rather than get less. Spinners and manufacturers will probably improve their position during the coming year, and when contracts are secured to keep machinery running buyers will be compelled to pay more money, as the rates ruling for a long time now have not been at all remunerative. It is, therefore, likely that cloth prices during 1922 will be higher than during the past twelve months. Demand will fluctuate, and no trade boom such as was experienced at the end of 1919 is at all probable, but in the spinning and manufacturing sections it is anticipated that the coming year will be generally healthier.

Section IV.

IRON AND STEEL.

IRON AND STEEL.

WHAT ARE THE PROSPECTS OF IRON AND STEEL IN 1922?

The immediate prospects of the iron and steel industry are obscured by the Washington disarmament proposals, which, if ratified, must react to a greater or less extent on the metal trades. Apart from this factor much depends on industrial peace. Assuming lower fuel prices production costs will be cheaper.

If the price of the metal can be kept down, makers may be called upon to satisfy, in ever increasing quantities, some of the more urgent needs of the world.

Less is likely to be heard of our foreign rivals, as the superior equipment and natural advantages enjoyed by the British industry render it well able to meet and match any fair competition from any quarter.

IRON AND STEEL.

Properly interpreted, the happenings of the past year may serve as a timely, if costly, object lesson to all engaged in the iron and steel or any other of the basic industries of this country. While employers have learnt that the power of labour is such that the fruits of years of effort and millions of capital may be well nigh destroyed through the ill-advised actions of a section of the working community, labour, on the other hand, has found, to its cost, that the strike weapon is a two-edged sword and that, clumsily wielded, it may tend to destroy where it was designed to protect.

In justice to the workers in the iron and steel industry, it must be stated that the trials and difficulties through which the trade has passed were none of their making. As a matter of fact, it is generally conceded that the iron and steel worker is one of the most steady and contented of men, and that the industry as a consequence is notably freer from disputes than almost any other. Nor can it be said that the employers could have prevented the unfavourable conditions which arose, even had they been foreseen. First and foremost came the sudden and quite unprecedented slump in trade; not peculiar to any one industry or country, but world-wide and complete.

Reasons for the changed condition of affairs were sought and given, and remedies were applied in vain.

However simple the explanation offered, or however ingenious the methods adopted in order to stimulate demand, buyers ceased to come forward. As a consequence stocks accumulated, and in many industries goods had to be thrown on to an unwilling market at prices lower than the cost of production. In many essential commodities, however, appreciable, but quite legitimate, cuts in prices were made, the cost of living being thereby reduced by several points, in view of which labour was called upon to submit to a corresponding reduction in wages. Then came the miners' thunderbolt. It is only necessary here to refer to the disastrous effects on the iron and steel industry, which is so absolutely dependent on a continuous and abundant supply of fuel. This is best illustrated by a comparison of the pig-iron and steel production during each month of 1921, as against the same periods in the preceding year.

Production in the United Kingdom.

	PIG IRON.		STEEL.	
	1920.	1921.	1920.	1921.
	Tons.	Tons.	Tons.	Tons.
January ..	665,000	642,100	754,000	493,400
February ..	645,000	463,600	798,000	483,500
March	699,000	386,000	840,000	359,100
April	671,000	60,300	794,000	70,600
May	739,000	13,600	846,000	5,700
June	726,000	800	845,000	2,700
July	750,000	10,200	789,900	117,200
August	752,400	94.200	709,200	434,100
September ..	741,000	158,100	884,700	429,300
October	533,200	235,500	544,300	405,400
November ..	403,200		505,100	
December ..	682,500		746,600	

The above table, compiled from the returns issued by the National Federation of Iron and Steel Manufacturers, is an eloquent commentary on the disastrous effects of the ill-advised and, to some extent, abortive strike in the coalfields. It will be seen that, while the output in the first quarter of the year, due solely to the existing trade conditions, fell lamentably short of the previous year's total, the production during the period covered by the coal strike was almost negligible. Owing to trade depression the March output fell to only 386,000 tons of pig iron, and 359,100 tons of steel, but in the first month of the strike, production declined to 60,300 tons and 70,600 tons respectively, the succeeding two months showing still further declines. In March 109 iron furnaces were in blast, and 184 steel; the subsequent lack of fuel resulted in their rapid damping down, only 11 iron and 24 steel being in operation at the end of April, while at the end of May only one of each remained in blast.

It was estimated that the value of the product lost to the industry directly attributable to the stoppage during the three months was no less than £16,000,000 to £18,000,000, while about £6,000,000 was lost in wages. At the same time, the capital loss, as a result of the damage caused by the damping down of the furnaces, must have reached a formidable figure.

The disturbed conditions of trade made iron-masters somewhat chary of re-starting their furnaces, and one month after the resumption of work in the coal mines only 15 had been restarted. August saw the number raised to 47, while at the end of September there were 67 in blast.

The steel furnaces were put in more rapidly, and by the end of July 183 had resumed operation, while August saw the number brought up to 273. Had it not been for the widespread and serious unemployment, the number would have been considerably less, as the amount of trade available did not warrant the restarting of so many. In order to bring some measure of relief to the workers and their families, however, a number of additional furnaces were put in blast, thus finding employment for some hundreds of men.

Need for Cheaper Fuel.

Fortunately for those engaged in the iron and steel industry there has since the strike been an appreciable reduction in the cost of fuel. This is not to suggest that the present level of coal and coke prices will serve. To the contrary, unless fuel prices are reduced to much lower levels than appears to be contemplated at the moment, the iron and steel industry cannot hope to return to full production. The fall which has already occurred, however, has permitted makers to reduce their prices, the immediate effect of which has been a steady but quite appreciable increase in the demand. In order fully to appreciate the significance of this fact, it is necessary to recall the experience of the American producers who failed to gain any additional orders, despite the reduction in prices to below production costs and the temporary elimination of the British product. The British industry has still a big lee-way to make up, and it is evident that this cannot be done except at very much lower prices than those now ruling. But prices of iron and steel cannot be reduced until production costs are likewise lowered, and before that can be done there must be a further substantial cut in fuel prices accompanied by lower railway rates.

The World's Requirements.

But, while the industry is admittedly in a very parlous state, it is still possible to regard the more distant outlook hopefully. In taking this view one is buoyed up by the basic fact that, however small the immediate demand may be, the world is very definitely in need of vast supplies, and that every day brings us nearer that time when the fulfilment of the ordinary requirements can no longer be postponed. For five years the whole iron and steel resources of the world were concentrated upon the production of steel for the purposes of destruction. Very little of the metal produced was available for work of a constructive character, and the essential work thus held in abeyance was increased enormously at the end of the war by the necessity of making good that which had been destroyed.

The world requires, and will require for many years to come, vast quantities of steel for railways, bridges, houses, fencings, roofings, machines, tools, etc. Huge railway and other steel-using schemes have been held up since 1914, and are still awaiting a favourable opportunity to be put into execution. Ordinary renewals and repairs are still far in arrears, and vast constructional works have been delayed. Moreover, new uses have been found for the metal. Steel office equipment has ceased to be a novelty and its adoption promises to be more general when the price of the raw material enables it to be produced more cheaply. All-steel trains are now in general use on our underground railways, and the obvious advantages obtained by its use have led at least one of our great surface lines to adopt a covering of sheet steel for all its new rolling stock.

Cause of Present Stagnation.

All these circumstances spell a huge potential demand, and one that it will take many years to satisfy. Why, then, with all this great need for steel, has there been no call for the metal ? How is it that steel consumers are not falling over one another in order to obtain supplies ? These questions naturally project themselves into the mind when the present stagnation is considered in face of the world famine in steel. Many factors combine to keep orders out of the market, but the most potent of them all is lack of stability of prices. The market is abnormal owing to the abnormal conditions elsewhere. Consumers will not contract to take large quantities of the metal to-day when prices this day week may be shillings a ton lower. Similarly, manufacturers are chary about accepting large orders at existing prices when some new demands on the part of labour might involve them in heavy loss. But this waiting attitude cannot last for ever, and it is to be hoped that the need for it will soon be past. Sooner or later labour will recognise that uneconomic wage demands mean high

production costs, loss of trade and unemployment ; that only by hard work can steady employment and good wages be assured. Signs are not wanting that the hard school of experience is forcing the lesson home; then, and then only, can manufacturers and consumers alike look ahead, confident that the market has reached a condition of stability sufficient to warrant them placing and executing their orders with the utmost freedom.

Foreign Competition.

One disturbing factor which has attracted much attention during the past year is the growth of foreign competition. But while there is much to warrant the uneasiness caused by the divergence of orders from this country to the Continental markets, there is really no cause for alarm. The fundamental factor in connection with iron and steel production costs is the price of coal and coke. At one time during the past few months the cost of fuel was almost prohibitive for iron and steel operations and it was calculated that the coke needed to produce a ton of British pig-iron cost as much as the total outlay per ton in America and Germany for fuel, ore, time and labour combined. In such circumstances much business was lost to this country. Since then, however, the disparity has been largely reduced, and is likely to become less and less as coal prices fall further. On this latter contingency, of course, depends our power to secure orders in face of foreign competition, but already makers are in a position to hold their own against many of their competitors and there are good prospects that later reductions will further improve our trade, though necessarily there is a considerable lee-way to make up.

A Passing Phase.

The truth is that many people fail to recognise to what degree the diversion of trade abroad is a temporary one, due to special circumstances which are slowly but surely passing away. Under normal conditions British steel manufacturers have proved their ability to occupy a predominant position in foreign markets, and it is hardly open to doubt that they will do so again. In considering the position of the iron and steel industry, so many are inclined to dwell on present-day conditions, altogether overlooking the fact that they are largely artificial and abnormal. Face to face with the gloomy state of affairs of to-day, it is so easy to lose sight of the fact that this country has a great natural advantage, which no other land possesses, in the contiguity of mines, furnaces, manufactories and ports. In Germany, the average haul for raw materials to furnaces, and for finished goods to ports, is 150 miles, whilst in America it is over 500 miles. In regard to the quality of fuel and ore we are far ahead of any of our competitors. We have a manufacturing and metallurgical skill second to none in the world. We have by far the widest experience of foreign markets and customs ; the most colonies needing steel, and the best ocean transport. Given cheap and abundant fuel and a determination to secure once more the lion's share of international trade, we need not fear the most formidable of our competitors.

Prices.

In the following table is shown the monthly price movements as recorded by the "Statist." It will be seen that drastic reductions occurred in all grades at the very beginning of the year, followed by further cuts at irregular intervals throughout the whole period. The record is a complete reversal of that for 1920, when prices opened at the lowest level and closed at the end of the year at the top. The downward tendency appears to have reached its limit for the time being. Indeed in some quarters manufacturers openly declare that they are producing at a loss and it seems probable that, unless further reductions occur in the price of fuel, metal prices may harden slightly in the near future.

	Scotch Pig Warrants.	Middlesbrough Warrants.	Hematite Warrants.	Staffordshire Bars.	Common Bars.	Steel Rails.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Dec. 31 (1920)	11 11 0	11 5 0	13 0 0	33 10 0	£30–£30 10s.	£23—£25
Feb. 4	10 1 0	9 15 0	11 0 0	31 10 0	£25–£26 10s.	21 0 0
Mar. 4	7 16 0	7 10 0	9 0 0	31 10 0	23 0 0	18 0 0
April 1	7 10 0	7 10 0	9 0 0	27 10 0	23 0 0	18 0 0
May 6	6 6 0	6 0 0	8 0 0	27 10 0	23 0 0	18 0 0
June 3	6 16 0	6 10 0	8 0 0	27 10 0	19 0 0	15 0 0
July 1	6 16 0	6 10 0	8 0 0	22 0 0	19 0 0	15 0 0
Aug. 5	6 16 0	6 10 0	8 0 0	22 0 0	16 0 0	14 0 0
Sept. 2	6 16 0	6 10 0	8 0 0	22 0 0	16 0 0	14 0 0
Oct. 7	6 6 0	6 0 0	6 10 0	18 0 0	14 0 0	14 0 0
Nov. 4	5 16 0	5 10 0	6 0 0	17 0 0	14 0 0	10 10 0

United States.

Notwithstanding her extensive equipment and an abundance of cheap fuel, the United States is far from occupying the dominating position in the world's markets which the circumstances would appear to warrant. She is by the nature of things the world's largest producer of coal, iron and steel, but at the same time she is also the greatest consumer. Her home needs are so vast that, even were her great producing machinery working to capacity, she could still spare but a very small proportion for overseas markets. It is true that an endeavour has been made to obtain a footing in many of the world's markets, but that the effort has been attended with but scant success is evident from the published statistics which disclose a huge falling off in exports, unaccompanied by any accumulation of stocks.

For the first eight months of 1921, the principal iron and steel products exported were valued at $258,705,461, compared with $410,205,515 for the corresponding period of 1920, and $425,377,531 in 1919. The following table gives the value of the principal items in the iron and steel exports for the eight months, and is instructive as showing which branches of trade have suffered most severely, and which have gained :—

U.S.A. IRON AND STEEL EXPORTS—(EIGHT MONTHS).

	1921.	1920.	1919.
	$	$	$
Pig Iron	686,982	6,798,474	9,752,997
Rails	15,968,660	23,257,707	27,873,644
Structural Shapes ..	23,510,518	20,663,521	22,586,875
Billets	376,154	9,873,412	13,389,493
Steel and Wire Rods and Bars	13,210,390	41,455,288	41,881,068
Wire Nails	2,373,028	6,594,615	8,599,225
Cast Pipes	6,366,576	5,078,413	3,473,469
Wrought Pipe	43,715,984	26,452,656	26,610,402
Sheet and Plates	39,088,998	69,102,771	73,104,089
Tin Plate	14,143,748	27,109,821	26,708,624
Barbed Wire	2,782,496	9,465,436	7,125,665
Other Wire	7,557,938	13,998,502	18,641,765
Engines and parts of ..	56,716,933	97,901,843	80,439,895
Metal working machinery	16,883,061	30,673,901	41,605,129
Tools	15,323,995	21,779,155	23,585,191

It will be seen that with the exception of structural shapes, cast-iron pipe and wrought pipe, all products show decreases in value. Further evidence of the extent to which the American industry has suffered is given in the following tabulated statement of the monthly production during the past two years :—

United States Production.

	PIG IRON.		STEEL.	
	1920.	1921.	1920.	1921.
	Tons.	Tons.	Tons.	Tons.
January ..	3,014,000	2,401,800	3,540,000	2,588,300
February ..	2,979,000	1,937,300	3,410,900	2,055,300
March	3,375,900	1,595,500	3,927,400	1,845,600
April	2,739,800	1,193,000	3,140,900	1,441,600
May	2,988,900	1,221,200	3,431,100	1,500,300
June	3,043,500	1,064,800	3,547,200	1,191,700
July	3,067,000	864,600	3,335,500	954,100
August	3,147,400	954,200	3,529,900	1,351,600
September ..	3,129,300	985,529	3,523,900	1,388,300
October	3,292,600	1,240,200	3,581,000	1,616,800

Taking the figures for the first six months, it will be seen that the total production was 9,413,600 tons of pig-iron and 10,622,800 tons steel as against 18,141,100 tons and 20,997,500 tons, respectively, in the first half of 1920, the reduction in 1921 amounting to almost 50 per cent. In the succeeding months the output was further restricted, and although some improvement is possible during the closing months of the year, it is clear that the total production for 1921 will be only about half that of 1920.

The slump in output appears to have been general and confined to no particular section of the country.

In the tabulation of production by States there is no instance in which the output for the first half of 1921 equalled the production of either half of 1920. The middle western States seem to have suffered to a relatively less degree than the other regions, but even here the showing is inordinately bad. Pennsylvania is credited with a production of 7,241,726 (short) tons for the first half of 1920; 6,741,408 tons in the second half, and only 3,577,570 tons in the six months to June 30th last. In like manner the output of New York and New Jersey combined in the three successive half years was respectively 1,207,475 tons, 1,393,659 tons and 506,113 tons. The showing in the Middle West, as already stated, is not quite so bad. Thus, Illinois for the three half years shows 1,634,164 tons, 1,646,711 tons and 1,031,801 tons respectively. Indiana and Michigan combined make a similar showing, the output of these States being 1,426,045 tons in the first half of 1920, 1,513,476 tons in the second half, and 1,019,010 tons in the first six months of 1921.

American Price Cuts.

While drastic reductions in prices were made at the close of 1920, it is well to take note of the further declines recorded in the first half of 1921. For example, No. 2x Philadelphia pig, which in 1920 had risen to the unprecedented high price of $53·51, was quoted on January 4th, 1921, at $34·79, and on June 28th last was down to $25·50, a drop of more than 50 per cent. in a little over nine months. No. 2 Valley Furnace on June 28th, 1921 commanded only $21·00, as against $33·00 on January 4th and $50·00 early in September, 1920. No. 2 Southern at Cincinnati moved down from $39·50 on January 4th, 1921, to $26·00 on June 28th, after having been quoted as high as $46·50 in October, 1920. No. 2 Birmingham, which fetched up to $42·00 in 1920, brought only $35·00 on January 4th, and $21·50 on June 28th, 1921.

In the second half of the year there have been in all cases reductions to still lower levels, although latterly the movement has been checked and there have been some recoveries. The following table shows the prices of the various grades of pig-iron at the beginning of January and end of June for the last three years:—

PIG IRON PRICES.

Grade.	June 28 1921.	Jan. 4 1921.	June 29 1920.	Jan. 6 1920.	July 1 1919.	Jan. 1 1919.
	$	$	$	$	$	$
No. 2x, Philadelphia ..	25 50	34 79	47 15	44 35	29 00	36 15
No. 2 Valley Furnace ..	21 00	33 00	45 00	39 00	26 75	31 00
No. 2 South'n at Cincinnati	26 00	39 50	45 60	40 60	28 35	34 60
No. 2 Birmingham ..	21 50	35 00	42 00	37 00	24 75	31 00
Bessemer pig at Pittsburgh	24 46	33 96	46 40	38 40	29 35	33 60
Gray Forge Iron at Pittsb'g	21 96	33 96	44 40	38 40	27 15	31 40

Notwithstanding the repeated reductions in prices recorded above, the demand for practically all kinds of iron and steel products kept continually shrinking. Indeed, it was not until early in September, when makers began to raise their prices to bring them more in accord with production costs, that business showed any signs of revival. Consumers then appeared to realise that they could not look for any further reductions, and that a reaction in an upward direction was indicated. Consequently, orders came out somewhat more freely, encouraging makers to increase their production. There are so many factors of uncertainty in the situation, however, that a reliable estimate of the future prospects of the industry is difficult to obtain. Buyers and sellers alike appear to share the uncertainty as to the significance of the advance in prices, and the consensus of opinion appears to be that, unless the increase in demand outruns the increase in production, the advanced rates will be difficult to maintain.

France.

In 1913, France's average monthly output of iron and steel was 427,000 tons of pig-iron and 385,000 tons of steel. In the same year the average monthly output from Lorraine, now ceded to France under the Treaty of Peace, was 317,000 tons of iron and 188,000 tons of steel. New works constructed in France for war production have a capacity of approximately 50,000 tons of iron and 100,000 tons of steel per month. The theoretical post-war monthly production capacity of France is, therefore, about 794,000 tons of iron and 673,000 tons of steel. Unfortunately, various causes have contributed, on the one hand, to diminish production, and on the other hand, to prevent recovery from being as speedy as might have been hoped, and the actual output has fallen far short of the above figures, as the following table shows :—

French Production.

	PIG IRON.		STEEL.	
	1920.	1921.	1920.	1921.
	Tons.	Tons.	Tons.	Tons.
January ..	192,000	288,000	192,000	263,700
February ..	202,000	287,400	191,000	259,600
March	195,300	295,300	185,100	246,900
April	176,700	287,700	183,100	252,600
May	220,000	278,100	169,500	240,400
June	266,500	280,900	240,400	240,800
July	295,300	262,400	250,700	219,500
August	316,300	250,800	272,300	228,600
September ..	342,000	240,600	295,200	232,400

It will be seen that the monthly output does not approach even 50 per cent. of the estimated capacity. As a matter of fact, all indications point to the passage of many years before France will be able to employ all the furnaces now at her disposal.

The state in which the Germans on their retirement left the coal mines in the Nord and the Pas de Calais is well known. After two years of persistent toil some of the least damaged have been able to resume operations on a restricted scale, but in many of them the work of restoring the pits and freeing them from water is still in progress. The output of the iron mines, which were also flooded, also shows a considerable decrease, but, in view of the fuel shortage and other difficulties, the present production, small as it is, is sufficient to meet the existing demand. In the case of the iron and steel works the task of reconstruction was confronted by innumerable obstacles, such as the housing of labourers, the organizing of the transport of materials on railways, which were themselves in course of reconstruction, and, perhaps the most formidable of all the difficulties, the obtaining of the credits necessary for commencing the work. In view of all these circumstances, therefore, the actual rate of production shown in the above tabulated statement is quite as good as could be expected. At the same time it is clear that it will be some considerable time before France can have any surplus available for export. When fully developed, the French iron and steel industry will count among the greatest in the world. But that will not be for many years. In the meantime France is not in the position to be regarded as a serious competitor in the world's markets.

Belgium.

Much has been heard during the past year of the growing competition from Belgium. When the production statistics are examined, however, it is shown that the output so far reported in 1921 falls very far short of that recorded in the previous year, which was less than 50 per cent. of the pre-war average. In 1913 the average monthly production of pig-iron was 203,800 tons. In 1919 an average of only 20,600 tons was produced monthly, while in 1920, as a result of almost superhuman effort, the output was raised to an average of 92,700 tons per month. Of steel, 202,300 tons was the monthly average production in 1913; 27,400 tons in 1919, and 101,300 tons in 1920. How the 1921 output compares with these figures may be learned from the following

table, in which the actual monthly output for 1920 is given :—

Belgian Production.

	Pig Iron.		Steel.	
	1920.	1921.	1920.	1921.
	Tons.	Tons.	Tons.	Tons.
January	39,000	110,600	55,000	119,100
February	52,700	103,700	70,600	98,400
March	65,000	104,700	77,600	96,300
April	74,500	94,700	98,700	108,700
May	90,400	74,600	97,400	62,800
June	99,400	67,400	111,200	54,200
July	108,800	44,600	116,900	26,900
August	113,200	43,800	121,400	27,800
September	104,300	—	109,500	—
October	122,700	—	119,700	—
November	116,600	—	117,800	—
December	124,900	—	119,400	—

It will be seen that, as opposed to the progressive character of the figures for 1920, the tendency during the past year has been consistently downward, with the exception of April, when about 10,000 tons more steel was produced than in the previous month. The figures are instructive and do not suggest that the efforts to compete in the world's markets are meeting with much success. An examination of the overseas trading statistics also fails to support the theory that her trade in iron and steel in the foreign markets is expanding. In 1913 Belgium exported an average of 128,800 tons of iron and steel per calendar month. In the last six months of 1920 an average of 98,600 tons per month was exported, showing an appreciable increase over the first six months of the year, when an average of 49,200 tons was shipped. From January last onwards, however, there has been a gradual decline, and the average exports for the first six months of 1921 worked out at only 89,200 tons per month. The truth of the matter is that Belgium is feeling the effects of the trade depression no less acutely than ourselves. The Belgian iron and steel industry has not fully recovered from the disastrous effects of the German occupation. A tremendous amount of capital and effort has been expended in the attempt to rehabilitate the industry, attended, be it said, with gratifying success. But should a relapse set in at this juncture the result might prove disastrous. Hence the present activity in the markets of the world, aimed at securing orders at almost any cost with a view to keeping the industry alive.

Prospects.

The immediate future of the British iron and steel industry is less promising than it appeared a few weeks ago, owing to the limitation of armaments proposed at the Washington conference. At the time of writing no decision has been reached, but it appears probable that the original proposals will suffer many modifications before they are rendered acceptable to all the Powers concerned. Whatever the final decision may be, however, it is certain that naval construction during the next ten years will be very much curtailed and that the expected recovery in the iron and steel trade will as a consequence take longer to materialise. There are, on the other hand, some distinctly encouraging features in the general situation.

Recent weeks have witnessed a substantial drop in the prices of fuel and essential raw materials, accompanied by more abundant supplies. A cut in the price of all grades of iron and steel followed, and makers have been able to offer some lines at competitive prices in the overseas markets, to the discomfort of our Continental rivals. Much now depends on whether the manufacturers receive sufficient support from buyers to warrant an increased production. Past experience has taught makers that it is unwise to embark on the costly experiment of restarting furnaces unless an immediate market for their product is assured, but it may be taken for granted that any sustained improvement in demand will be quickly followed by increased production, the value of delivery "on time" being fully recognised by the trade. Unless fuel prices and freight rates go considerably lower there is not likely to be any further reductions in the prices of the metal. The present level is not altogether an economic one, and makers may find it difficult to maintain it for any length of time. A slight upward movement is therefore possible, and may serve to stimulate demand, as it did in the United States, where orders were withheld in the belief that the bottom of the downward movement had not been reached. The industry still has many problems to solve, but notwithstanding the complexity of the situation there are ample grounds for optimism. The needs of the world are admittedly vast—so vast that it will require years of full production to satisfy them. The world's requirements must sooner or later be translated into orders. When that time comes—and it cannot be delayed indefinitely—the iron and steel industry will enter a period of prosperity such as it has never known.

Section V.

TIN.

TIN.

WHAT WILL BE THE COURSE OF PRICES IN 1922 ?

Supplies are likely to decline considerably.

Consumption will probably increase from the very low level prevailing in 1921, though the unsettled condition of the foreign exchanges and the possibility of further world-wide labour troubles render the outlook extremely uncertain.

The average price for the year is estimated at £200 per ton, with the possibility of a higher level in the latter part of the year. In a period of industrial activity the metal might go above £300, but the existence of large stocks in the East bought around £220 per ton must be reckoned with.

In the absence of a successful scheme of stabilisation the market remains sensitive to speculative influences, and wide fluctuations must be expected.

TIN.

At the close of 1920, the price of tin stood at £205 15s. per ton, having fallen from £277 since the middle of September. During January, 1921, there was a precipitate slump, and the downward movement continued until on March 9th the lowest price of the year, £148 5s., was touched. From that point there was a steady recovery to £184 2s. 6d. on May 23rd, followed by a fresh downward movement, until on August 25th the quotation stood at £149, or less than £1 above the lowest figure of the year, but by the end of November the price had recovered to over £160. The extreme fluctuations in the spot price were between £148 5s. and £210 5s., the latter being the closing quotation of January 7th. Comparison with previous years is shewn below :—

	1916.	1917.	1918.	1919.	1920.	1921.
	£	£	£	£	£	£
Highest ..	205	309¾	399	344¾	419½	210¼
Lowest ..	161½	180¾	235½	203½	195	148¼
Average ..	182	237¾	329¾	257½	297	—

The range of fluctuations thus amounted to £62, as compared with £224 10s. in the previous year, when conditions were altogether abnormal. The slump in trade, which occurred in the latter half of 1920 and persisted throughout the greater part of 1921, led to such a heavy falling off in the demand for tin that the price declined below the level at which it can be produced at a profit, except by the most economically managed propositions. The world has, therefore, been drawing upon old stocks, and the outlook, when these are exhausted, is very uncertain. The course of prices month by month is shown below, the quotation in each case being the mean spot price of standard tin :—

PER TON.

				£	s.	d.
Dec.	31	1920	..	205	15	0
Jan.	31	1921	..	168	15	0
Feb.	28	,,	..	159	15	0
Mar.	31	,,	..	158	15	0
April	29	,,	..	171	12	6
May	31	,,	..	174	2	6
June	30	,,	..	167	2	6
July	29	,,	..	159	17	6
Aug.	31	,,	..	157	2	6
Sept.	30	,,	..	156	12	6
Oct.	31	,,	..	156	12	6
Nov.	30	,,	..	160	10	0

Tin Production.

In extracting the metal, the first process is grinding the ore. This ground ore is then washed in order to remove the impurities, the specific gravity being so high that the earthy matter and even some of the foreign metallic ores present are easily eliminated in the washing process. In order to remove other extraneous matter of nearly the same specific gravity, the ore is roasted in a reverberatory furnace; sulphur and arsenic are thus expelled. The ore, thus freed from foreign matter to a certain extent, is mixed with the requisite fuel and limestone, and is again subjected to great heat in the reverberatory furnace, in order to bring the whole into a state of fusion, which should continue for about eight hours. The lime unites with the remaining earthy matters in the ore and flows off into a liquid slag, while the coal reduces the oxide tin to its metallic state. The tin thus obtained must, however, be further refined in order to produce the pure metal that commands the highest price.

It is desirable to glance briefly at the condition of production in various countries during the past year. First in importance come the Federated Malay States.

Federated Malay States.

The exports of tin ore from the Federated Malay States in 1920 declined by 2,000 tons to 34,935 long tons. The export of production in each State for the last five years in long tons is shown below :—

	1916.	1917.	1918.	1919.	1920.
	TONS.	TONS.	TONS.	TONS.	TONS.
Perak	27,242	24,643	23,080	22,126	22,134
Selangor	12,241	10,960	10,140	10,635	8,852
Negri Sembilan	907	734	967	878	697
Pahang	3,480	3,496	3,182	3,296	3,252
	43,870	39,833	37,370	36,935	34,935

Perak showed in 1920 an increase of ·034% ; Selangor a decrease of 16·73% ; Negri Sembilan a decrease of 20·67 per cent., and Pahang a decrease of 1·43%, the decrease on the total production, as compared with 1919, being 5·42%. The export of tin ore represents about 88% of the total production.

During 1920, the working expenses of the dredging companies were greatly increased owing to the rise in the cost of firewood and of labour. The average price of firewood was 13% higher than in 1919, and 93% above the pre-war figure. A further drawback was the great advance in the price of rice, though the Chairman of the Tronoh Mines anticipated lower prices both for rice and firewood in the course of 1921.

Production for 1921, so far as returns are available, shows a decrease of 1,300 tons, as compared with the corresponding period of 1920, the total to the end of October being 28,211 tons, against 29,511 tons for the first ten months of 1920.

The 1922 production threatens to be seriously reduced owing to the probable closing of many of the hydraulic tin mines that are not in a position to carry out the erection of bunds, dams, or dumps to prevent the blocking of the Malayan rivers—the blocking of which the Government intend to stop. The official statement made in the Legislative Assembly of the Federated Malay States ran as follows :—

> Tin miners who are using monitors (that is to say, water under pressure) for hydraulicing tin deposits, and who are allowing the solid matter to find its way to streams or rivers have been formally notified by the Mines Department that their water licences will not be renewed when they expire at the end of the current year. If any scheme for the retention of solids is put forward, it will, of course, receive favourable consideration. There is no interference with monitors on mines in which the arrangements for the retention of solids are satisfactory. The lampan system of mining is ground sluicing or hydraulicing with water which is not under pressure. The lampan miners who are allowing the solid matter from their mine to find its way to streams or rivers will, at an early date, be notified by the Mines Department either that their lampan licences will not be renewed when they expire at the end of the present Chinese year, or else that the renewal of the licence will depend upon a satisfactory scheme being put forward for the retention of the tailings.

Tin production in the State of Selangor which has been declining for several years past is likely to fall off considerably.

Owing to the high cost of coal delivered locally, as compared with the cost of coal in America, and owing also to the lower freight rate on tin ore as against that on slab, tin ore has been shipped from Singapore to the United States on a considerable scale during the past year, with the result that the Penang smelting works were closed down and those in Singapore were working short time. The attempt of the Federated Malay States Government to prevent such shipments by levying a prohibitive tax on the export of tin ore met with only partial success.

The results achieved last year by nine of the leading Malayan dredging companies are shown below :—

Malayan Dredging Companies' Results.

	1920 Output.	Revenue from Ore Sales.	Expenditure plus Royalty.	Working Profit.	Working Cost per Ton.
	TONS.	£	£	£	£
Gopeng Consold.	733·53	133,745	65,386	90,433	89·1
Idris Hydraulic ..	263·16	46,980	30,560	24,904	116·8
Kramat Pulai ..	306·30	34,327	19,132	15,185	62·4
Lahat	533·5	95,496	80,859	15,173	151·5
Malayan Dredging	594·33	110,682	80,540	31,279	135·5
Rambutan ..	212·12	40,356	15,341	25,015	77·08
Sungei Besi ..	485	83,223	65,608	17,615	135
Tekka-Taiping ..	394·94	70,024	39,657	43,802	100·4
Tronoh Mines ..	1125·5	194,731	71,281	30,921	63·3

While a great difference is shown in the working cost per ton, the expenses of the largest producer are extremely low, at little more than £63, while the average for the nine companies does not greatly exceed £103 per ton. It must not, however, be assumed that the dredging companies secure a profit equal to the difference between the cost of producing the ore and the current price of Straits tin, because the latter represents the value of the smelted product. Thus the Tronoh Mines secured an average price for tin ore in 1920 of £173 per ton, whereas the average quotation for the metal in London was £297 per ton.

Production of Tin in Federated Malay States.

(Estimated at 70% of concentrate shipped to smelters.)

Long tons.

	1917.	1918	1919.	1920.	1921.
	TONS.	TONS.	TONS.	TONS.	TONS.
January	3,558	3,149	3,765	4,265	3,298
February ..	2,755	3,197	2,734	3,014	3,111
March	3,286	2,609	2,819	2,770	2,190
April	3,251	3,308	2,858	2,606	2,692
May	3,413	3,332	3,407	2,741	2,884
June	3,489	2,952	2,873	2,940	2,752
July	3,353	3,373	3,756	2,824	2,734
August	3,413	3,259	2,956	2,786	3,051
September ..	3,154	3,166	3,161	2,734	2,338
October	3,436	2,870	3,221	2,837	3,161
November ..	3,300	3,132	2,972	2,573	—
December ..	3,525	3,023	2,413	2,838	—
Total ..	39,833	37,370	36,935	34,928	28,211 (10 mths.)

China.

The amount of tin exported from the Mengtsz District of China in 1920 was 182,581 piculs (10,869 tons), valued at Hk. Tls. 10,629,634, as against 139,977 piculs (8,332 tons) valued at Hk. Tls. 8,038,933, for 1919. From a revenue standpoint this export was highly satisfactory, but regarded commercially the prices obtained were very disappointing.

The year 1920 opened with very unfavourable prospects, and a complete lack of demand. The high exchange, coupled with the fall in the price of the metal, put a complete stop to the sale of stocks at Hong Kong, which in June were estimated at $10,000,000. As the highest sterling point for the Hong Kong dollar touched during the year was 6s. 2d. in February, and the lowest point 2s. 11d. in December, the violent fluctuations naturally had the most harmful effect on the tin business, and during the first six months of 1920 paralysed it completely.

Some reaction was bound to set in after so pronounced a decline, and from July, 1920 onwards variable shipments (regarded as speculation) from Hong Kong to America took place. In December, it was estimated that only the usual recognised proportion of the supply was lying at the various godowns of Hong Kong awaiting shipment abroad.

Apart from the influences of the fluctuating exchange, another element which rendered trade unsteady was the absence at Kokiu of more up-to-date methods in the treatment of the ore. Two American tin experts were engaged for the purpose of standardising the Yunnan Tin Company's output of metal. As Kokiu is the producing market, American buyers realise that it is cheaper to buy their tin from Kokiu direct than from Hong Kong houses. The adoption of this measure, therefore, was expected to result in a state of better trade.

Nigeria.

Nigerian tin production was reduced owing to the fall in the price of the metal, though the alluvial mining industry of this Colony was by no means so hard hit as was the case with the Cornish mines. The producers, moreover, were able to obtain a reduction in January, 1921, of the scale of royalties payable to the Nigerian Government. Formerly they had to pay a royalty of 2½% when the price of tin was less than £130, and a scale up to 7½% when the metal stood at £180 or over.

The new basis which came into operation on March 1st starts at 2% when tin is less than £180 per ton, and rises to 3% between £180 and £190, 4% between £190 and £200, 5% between £200 and £220, 6% between £220 and £240, 7% between £240 and £260, 8% between £260 and £280, 9% between £280 and less than £300 per ton, and 10% on £300 or over.

Since March 1st, the price has only once exceeded £180 per ton, and that for a very brief period, so that the mines have had to pay no more than the 2% royalty. In addition, the Government released the mining companies temporarily from certain labour obligations and agreed to a reduction in certain rentals, but it has not yet seen its way to lower the railway rate for tin ore, which for some years past has been £11 per ton. This is a very high rate compared with that chargeable on mineral traffic elsewhere.

The chairman of the Ropp Tin Mining Company cited the case of a mine in another Colony whose mineral was carried for about the same mileage at 14s. 2d. per ton. He also referred to the increase in the returning charge of £15, as compared with about £6 5s. in pre-war days, and expressed the opinion that English smelters should see their way to make a substantial reduction, as otherwise they may lose some of the Nigerian business. This they would not even retain now were it not for the export duty, which is only recoverable by the Nigerian producers on their satisfying the local Customs that the tin concentrates have been dealt with by a firm in this country.

The Northern Nigeria (Banchi) Coy. claims to be able to produce tin at a total cost, including freightage to Liverpool and dock charges there, royalties and smelting charges, of less than £60 per ton of concentrates.

The Ropp Company's cost of production in Nigeria in 1920 was £96 14s. 2d. per ton, as compared with £106 4s. 4d. in the previous year. The average price received in London was about £144 per ton. The Company has been able to reduce costs so as to prevent any loss being made with tin at £150 per ton.

A new hydraulic proposition which commenced working in the course of last year contemplated the introduction of up-to-date methods in tin-mining. The tin deposits to be worked were estimated to average 2 lbs. of metallic tin per ton, while costs were expected to range between 9d. and 1s. 3d. per ton. Taking 1s. per ton as the costs and the yield as 1 lb. of tin per ton, such a company should be able to market tin at £100, anything over being profit, after allowance for overhead charges, freight, etc. If the concentrates are smelted, the price would be about £15 to £20 per ton over the price of ordinary commercial tin.

Nigerian Tin Production.

(In long tons of concentrate of unspecified content.)

	1916.	1917.	1918.	1919.	1920.	1921.
	TONS.	TONS.	TONS.	TONS.	TONS.	TONS.
January	531	667	678	613	547	438
February	528	646	668	623	477	370
March	547	655	707	606	505	445
April	486	555	584	546	467	394
May	536	509	525	483	383	337
June	510	473	492	484	535	423
July	506	479	545	481	484	494
August	408	551	571	616	447	477
September	535	538	520	561	528	595
October	584	578	491	625	628	—
November	679	621	472	536	544	—
December	654	655	518	511	577	—
Total	6,594	6,927	6,771	6,685	6,022	3,973 (9 mths)

These figures are taken from the monthly returns made by individual companies reporting in London, and probably represent 85% of the actual outputs.

Australia.

The Australian output, amounting to some 4,000 tons in each of the four years ended 1920, will have been materially reduced in 1921 by the closing down of the Mount Bischoff Tin Mine of Tasmania, which accounted for some 1,900 tons of the 1920 production. At June 30th, 1920, the estimated ore in sight was 123,870 tons "positive" ore, average value 0·35%, tin and 266,000 tons "probable." Evidently ore of such low grade could not be treated at a profit under the conditions prevailing in 1921, notwithstanding that working costs were under 10s. per ton.

Bolivia.

The low price of tin ruling at the commencement of 1921 caused the Bolivian mine owners to make a drastic cut in production. The January exports were below the average at 1,400 tons fine, and the February, March and April exports were expected to average no more than 700 tons fine. In all probability there will be a substantial reduction in the shipments for the whole of 1921 as compared with the total of 29,452 tons shipped in 1920. The heavy freight charges, the export duty and the difficulties created by the abnormal condition of exchange, added to the fact that tin is mined at high altitudes, render it extremely unlikely that any considerable sales will have been possible at such prices as ruled in 1921.

Although the shipments for 1920 were returned as 29,452 tons, it is estimated that the actual output did not exceed 21,000 tons, and in respect of 1921 a further decline to 15,000 tons is considered probable. Imports of Bolivian tin into Europe in the first ten months of 1921 totalled 4,802 tons.

The tin zone in Bolivia is divided into four districts, La Paz in the north, Oruro in the centre, Chorolque in the south, and Potosi in the east. The city of Oruro is the tin metropolis and commercial centre of the industry. The most productive mine in the country is that of La Salvadora, which has an output varying from 600 to 900 tons a month. The mines of the Aramayo group operating in Bolivia produced 2,000 tons of tin in 1920. Most of the mining country is in the Cordillera Real Range and the lodes are found at altitudes of from 11,000 to 16,000 feet, the height of one in the Monte Blanco mining section being 14,500 feet above sea level.

Of the 1920 production, 13,375 tons of ore (fine) were shipped to the United Kingdom, and 14,372 tons to the United States, as compared with 15,077 tons and 12,103 tons respectively in 1919. Apart from the higher cost of freight to the United Kingdom, it was found practicable to smelt a greater quantity than in previous years in the United States. The total arrivals in Europe in 1920 amounted to 13,524 tons of ore (fine) against 14,334 tons in 1919, and 16,622 tons in 1918.

In 1916, when the average price of the metal was approximately level with that of the past year, the shipments totalled only 21,145 tons, and it is considered that this figure will not be reached in 1921. A reduction of some 10,000 tons in the world's supply is indicated from this source alone.

Cornwall.

Owing to the continued fall in the prices of tin, wolfram and arsenic, the Cornish mines were compelled to suspend operations. Previous to the slump in tin, the mines had been hard hit by the high cost of coal, which is a very important factor in itself or in the form of electrical energy, since these deep workings have to be constantly pumped. Every miner in Cornwall was thrown out of work, and as the months went by and the price of tin did not improve or that of coal decline to the extent that would justify a fresh start, the question of obtaining a subsidy from the Government, which had been refused on previous occasions, was revived.

The mineowners contended that the responsibility for the closing down rested with the Government, which during the war controlled the price of tin without controlling that of industrial coal, and consequently prevented the Cornish mines from deriving the full benefit from the high price to which the metal was forced in consequence of the war and its after effects. But, although some of the principal mines are ready to resume production at short notice, when conditions become favourable, there does not appear to be any immediate prospect of such an improvement as would justify a general resumption of work.

Meanwhile the possibility of concentrating resources by the amalgamation of the leading mines has been under discussion. Many of the properties adjoin and in some cases underground workings are in close proximity, occasionally in actual contact. Whether any substantial advantages would accrue from such a policy is problematical, but it is certain that working costs, including wages, will have to be reduced to a minimum to allow of profits being earned. Arsenic, which had commanded a high price during the war, became practically unsaleable, and large stocks of this commodity and of wolfram were carried by the leading producers.

Provided the difficulty of costs can be overcome, either by Government assistance or by a substantial decline in coal or wages, Cornwall may again come to the front as a tin producer, for exploration work in comparatively recent times has revealed new bodies of ore of considerable extent. The East Pool, for instance, has located the Rogers lode, which has been driven on east and west for about 1,500 feet, with the prospect of its continuance for another 3,000 feet. The lode dips at a sharp angle, so that the life of the mine may be considered a long one, under payable working conditions. Owing to the caving-in of the old shaft, however, it may be necessary to sink a new shaft to reach and work the Rogers lode. Such a shaft would have a depth of about 1,500 feet, though this is regarded as a not very speculative or expensive operation, considering the work which has already been done in proving the continuity and value of the lode.

The chairman of one of the Cornish tin mining undertakings has approached the Mines Department with the suggestion that the Government should guarantee a price of £200 per ton to the producers for a certain period, the latter undertaking to refund any loss that might be sustained out of any profit that might be made, should tin rise above that price. The contingent liability is estimated at a very moderate amount. A Government expert has been appointed to investigate the conditions of the industry.

Cornish Tin Ticketings.

			Total Value.	Average Price Per Ton.		
1920.		TONS.	£	£	s.	d.
January	12	31	6,243	201	8	0
,,	26	51¾	10,574	204	6	10
February	9	37½	7,880	210	2	8
,,	23	53¾	12,120	225	10	10
March	8	18	4,038	224	7	7
,,	22	44	8,286	188	6	8
April	6	44½	8,367	188	0	5
,,	19	33½	6,375	190	6	0
May	3	61½	11,641	189	5	9
,,	17	44	6,151	139	16	0
,,	31	10	1,578	157	16	0
June	14	24¾	3,278	132	9	3
,,	28	14½	1,932	133	4	10
July	12	43¾	6,133	140	4	0
,,	26	10½	1,643	156	10	0
August	9	10½	1,664	158	10	0
,,	23	27¼	4,022	147	12	0
September	6	19	2,563	134	18	6
,,	20	10	1,552	155	5	0
October	4	9	1,359	151	0	7
,,	18	39½	5,225	132	5	11
November	1	9	1,329	147	14	5
,,	15	4½	597	132	17	6
,,	29	8½	965	113	12	0
December	13	8½	981	115	8	6
,,	28	8½	946	111	5	10

Tin Consumption.

Few commodities have been more severely affected by the period of deflation through which this country has passed since the early months of 1920 than tin. In the course of a year the quotation suffered a drop of nearly 65 per cent. due to the sudden drying-up of the demand for the metal and the consequent accumulation of stocks which their holders were unable to finance, and which had to be realised at the best price obtainable. Whereas in the earlier months of 1920 it seemed impossible to produce enough to satisfy the demand, the end of the year found producers only too anxious to restrict their output.

Policy of Stabilising the Price.

The closing months of 1920 witnessed a remarkable experiment in the direction of stabilising the price of the metal, which, although it has so far proved unsuccessful, may have far-reaching effects in the future. The Government of the Federated Malay States, concerned at the prospect of unemployment and discontent that threatened to result from the depression in the tin-mining industry of the Peninsula, conferred with the Government of the Straits Settlements and the Dutch holders of tin as to the possibility of regulating the price. This, it will be remembered had been forced down to what appeared to be an artificial and unnatural level by the difficulties of Chinese speculators, who, hard hit by the slump in rubber, had been compelled to realise their stocks of tin. The idea was that if these stocks could be taken over and " nursed " for a time, the position would right itself. As the event proved, this view was fallacious. The trouble was far too deep-seated to be cured by the application of any such remedy, even by the Government of the greatest tin-producing country in the world. The extent of the breakdown in European credits, with all the paralysing influence upon the world's trade which this implied, had not been sufficiently realised in the East, or the moment would not have been chosen to inaugurate a policy which was doomed to failure.

The first step was taken in December, 1920, when an arrangement was made whereby the Government of the Federated Malay States took over the unsold supplies from the smelters at 115 dollars per picul, equivalent to £236 per ton landed here. The effect upon the market, however, was not what had been anticipated. The fall in prices continued steadily under the influence of a totally inadequate demand from the consuming centres. The tinplate industry was depressed, and America was not buying—had not been buying to any extent, in fact, for several months past. The only result of the attempt to "peg" the quotation in the East, therefore, was to lead to a further accumulation of stocks which threatened to bring about a fresh collapse in the price of the metal.

This collapse came in January, 1921, when the quotation dropped nearly £40 per ton, involving holders in heavy losses which compelled the liquidation of stocks that could no longer be financed. The demand for the metal in this country remained poor, although some hopes were aroused by the receipt of more inquiries from the Continent and from the United States. Throughout this month, the Straits price remained "pegged" at the equivalent of £236.

About the middle of February, however, it became evident that this position could no longer be maintained. Consumption was more unsatisfactory than ever, and the

hopes which had been founded upon a revival of the Continental and American demand remained unfulfilled. Accordingly, the Federated Malay States Government was compelled to reduce the "pegged" price from 115 dollars to 100 dollars per picul, or the equivalent of £204 for tin landed here. Even this price was still above the level here, and at the end of February, the "peg" was withdrawn altogether. Since then, the Federated Malay States Government has held on grimly to the stocks it accumulated—said to amount to some 10,000 tons. The policy of attempting to stabilise the price of tin deserved a better fate, for the extraordinarily wide fluctuations in the metal have been a source of constant embarrassment to both consumers and producers for many years past. Despite the unfortunate result of the experiment, due to the fact that it was made at an unprecedented crisis in the world's financial history, it is possible that it will be repeated when conditions become more stable. Acting in co-operation with the powerful Dutch interests, it should be possible for the Straits authorities to control the price of tin, the only important producing area not directly under their control being Bolivia. It is by no means certain that the stocks held by the Federated Malay States Government will not eventually be realised at a profit, for the price paid was not greatly in excess of what used to be regarded as a normal average level in pre-war times, and the outlook for supplies is so uncertain that any material improvement in the world's consumption of the metal would quickly exhaust the existing stocks.

Review of the Year.

One effect of the policy of stabilisation was that, for a time, the standard price of tin became based virtually on stocks of Chinese and English tin; other brands, including Straits, Banca, Billiton and Australian, commanding a premium. But the accumulation of stocks in the East prevented any recovery in the price, which lost another £9 during February and reached its lowest point towards the middle of March. Before that time, the Cornish mines had gone out of production. Owing to the continued fall in the prices of tin, wolfram and arsenic, operations were suspended and have not since been resumed on any considerable scale. The Bolivian mine-owners also made a sharp cut in production.

In the course of March, it was understood that the Straits authorities had agreed with the Dutch that their respective stocks should not be thrown on the market, this arrangement to remain in operation until the end of May, but by this time the market was too completely demoralised to respond to any such announcement. The demand for tin remained very unsatisfactory. The slackness of the tinplate industry was intensified, and with little or no buying from America and a restricted Continental demand, business was reduced to very small proportions, practically the only support coming from "bear" operators, who believed that the bottom had been touched, and were nervous of being caught short.

As it happened, however, events again played into their hands, for on April 1st the great coal stoppage commenced, and the market once more gave way to depression. Throughout the month it fluctuated in accordance with the varying phases of the industrial situation, but on balance the course of the price was upwards, the tendency as usual being to anticipate the end of the coal struggle almost as soon as it started. Before the end of May confidence in an industrial revival had become so pronounced that the price of tin rose to £184 2s. 6d. per ton, or nearly £36 above the previous lowest. A factor in the rally was the renewal of the agreement between the Federated Malay States Government and the holders in Batavia for a further period of three months.

Support, however, was almost entirely professional, and it soon became evident that the recovery was not justified by the actual position of the metal. Domestic consumption was reduced to a minimum by the coal stoppage, and the production at the English tin smelters was practically suspended, America bought only spasmodically, but the Continent showed a fair amount of buying interest. During June, there were temporary rallies, but the tendency remained weak owing to the prolongation of the coal trouble. The Welsh tin-plate works took practically nothing, while America was able to satisfy her requirements by purchases in the Straits and China.

Throughout July consumption remained consistently poor, and prices had a drifting tendency, business remaining largely professional in character. The Continent bought on a moderate scale, and there was some inquiry from the United States owing to the proposed duty of

2 cents per lb. on imported tin. But the knowledge that large stocks were tied up in the East, and the probability of a further surplus accumulating, prevented any real recovery. During August the weakness became more pronounced, the continued depression of the tinplate industry and the anxiety shown by Straits holders to reduce their stocks being the chief factors at work, while the only " bull point " in sight was the possibility that the measures for relieving the famine in Russia would involve the shipment of vast quantities of tinned foodstuffs to the stricken areas.

The August returns rather unexpectedly showed a decline in the visible supply, estimated at 500 to 800 tons, but the figures were regarded as deceptive, and produced little effect on the market. Consumption remained quiet, the South Wales tinplate industry recovering but slowly, while hopes of an improvement in the Continental demand were dashed by the severe depreciation in the German and other exchanges. The agreement between the Federated Malay States Government and the Dutch holders was renewed for an indefinite period, but the knowledge that some 10,000 tons were locked up in the East and that the output in Malaya was not curtailed to any serious extent prevented any material progress being made towards recovery. The United States, however, showed more eagerness to buy and towards the end of September an advance in American tinplate prices was announced.

The re-establishment of railway communication with Yunnan Province pointed to larger shipments from the

East, and the September statistics showed an appreciable increase in the visible supplies. From this it was argued that production was still ahead of consumption, though it was expected that Eastern producers would further reduce their output.

Consumption, both in the United Kingdom and in the United States, showed a distinct improvement, thanks to the revival of the tinplate industries in the two countries, but little impression was produced on the home market, and prices were barely steady. During the first week of October, the East was selling moderate quantities at figures rather higher than the London parity, and throughout the rest of this month the market remained uninteresting, supply and demand being pretty evenly balanced. The increase of 2,114 tons in supplies during October, due mainly to large shipments of Banca tin, led to a slight set-back in the price, but it was realised that old stocks were still coming forward. The erratic behaviour of the German mark prejudiced the outlook for Continental consumption, but against this the tinplate industry was more active, and in November there was a decided improvement in the consumption of the metal, reflected by a fairly steady advance in the price.

Prospects.

The statistical position of tin would justify a higher price for the metal, provided one could reckon upon consumption on at least the normal scale of a pre-war year. In 1921, consumption was far below this level, and consequently estimates based upon the statistical position were falsified. The primary causes of this under-consumption were the demoralisation of the foreign exchanges, and the labour unrest by which the period of deflation was attended. In this country, the results of this unrest were seen in the prolonged coal stoppage which paralysed the tin-using industries, while the moulders' and joiners' strikes and the frequent troubles in the engineering trade contributed to the same end. Even when the supply of coal had been restored, the tin-plate industry was very slow in resuming operations, and more than one false start was made, the high level of working costs being an insurmountable obstacle. However, at the end of September it was estimated that 310 mills, or 70 per cent. of the Welsh tinplate mills, were in operation, and by the end of October 330 of the Welsh mills had restarted, while the tinplate industry in the United States received a decided stimulus.

A factor which has operated against the consumption of articles manufactured from tin during the past year has been the disposal of enormous quantities of stores by all the countries participating in the war. These supplies, however, have been gradually worked off, and will no longer be competing with newly manufactured products during the current year. While it lasted, the effects of this competition were extremely difficult to gauge, because accurate figures as to the amount of such stores available for disposal in foreign countries were unobtainable, but, undoubtedly, these sales went far to counteract the effects of the under-production of new goods already referred to. With the sales of surplus stores practically completed, a world shortage of tin manufactures, and especially containers, is quite possible. Vast quantities have been absorbed by the supply of tinned foodstuffs for the relief of the Russian famine. Despite the condition of the world's exchanges, consumption of such goods is increasing, and apparently no severe set-back need be expected, unless the peace of the world were again to be profoundly disturbed, or unless labour unrest were to develop still more acute manifestations.

So far, we have considered the chief influences bearing upon the consumption of the metal, a factor which is far more difficult to calculate than production, because it involves political and economic considerations, which have no direct connection with, though a very important indirect bearing upon, the purely commercial aspects of the problem. As regards production, as will be seen from the table, it is estimated that there was an increase of some 8,000 tons during 1920. In considering these figures, however, it must be remembered that it is possible to estimate the output of several of the tin-producing countries only from the amount of their shipments; such shipments do not necessarily represent production in the actual year under review. The whole of the apparent increase in the 1920 production disappears if the actual output of the Bolivian mines is taken instead of the shipments officially recorded.

While the exceptionally high prices for the metal which prevailed in the earlier part of 1920 provided a stimulus to production, the increased cost of labour, coal, etc., in all producing countries operated in the other direction, and tin-mining activity was by no means what might have been expected had working conditions been normal.

On the other hand, these high prices led to the shipment of stocks of tin accumulated in previous years. The immediate cause of the break from the highest point of nearly £420 was the fact that unexpectedly large supplies of Dutch tin, the existence of which had been carefully concealed, came on offer. Throughout the latter part of 1920 and the whole of 1921 the East was selling freely. At first the inducement to sell was provided by the belief that the peak of the boom had been passed, and there was a natural desire to secure good prices for old stocks before the slump set in. Later on the selling became of a forced character, the slump in rubber and silver being partly responsible for realisations of Chinese-owned stocks, the amount of which is always a matter of considerable uncertainty. As a result, the shipments assumed unexpectedly large proportions, and the world's "production" showed an apparent increase.

There can be no doubt, however, that the real production, as distinguished from the shipments of new and old stocks combined, has been on a declining scale throughout 1921. In the first place, the Cornish mines, which accounted for some 3,000 tons of the previous year's output, were completely out of action. The production of the Federated Malay States continued to decline and, as already shown, will probably be further diminished in the course of the ensuing year. Nigerian tin production is only possible on a reduced scale at such prices as have been ruling of late, and the Bolivian output is known to have been drastically cut in 1921.

There are, then, the factors of a probable increase in consumption, and a probable diminution of production, which, logically, should mean higher prices for tin in 1922. The metal, however, is also influenced by factors which have little to do with logic, such as the sympathetic influence of a breakdown of speculation in other commodities. The influence of the exchanges and of labour unrest must also be classed among the incalculable elements. But, so far as it is possible to estimate the course of so exceedingly unstable a market, the suggestion is offered that an average price of £200 per ton, which was regarded as a fairly high level in pre-war years, should be secured for tin in 1922. Provided there is no serious set-back to consumption, the price of the metal should gradually tend upwards. It may halt around £200, which is approximately the average price at which the Federated Malay States Government and the Dutch holders secured their stocks of tin for the unsuccessful attempt at stabilisation. But when these stocks are absorbed, the outlook for future supplies will be so uncertain that a period of scarcity may recur, in which a quotation of £300 or over would be far from unlikely.

Should the price rise again to such a level, it is probable that the Federated Malay States and the Dutch authorities, having emerged successfully from their first attempt to "peg" the market for the benefit of local producers, would essay a more ambitious scheme for the stabilisation of the price of tin. Provided the Chinese, Siamese and other Eastern producers could be brought in, there is little doubt that the thing could be done, the only other serious sources of supply being Bolivia and Nigeria, which would have to come into line. From the point of view of the consumer, it is devoutly to be hoped that stabilisation will become possible, the erratic fluctuations of the metal in recent years having provided a grave obstacle to its increased use.

Section VI.

TINPLATES AND GALVANISED SHEETS.

TINPLATES AND GALVANIZED SHEETS.

WHAT ARE THE PROSPECTS OF THE TINPLATE AND GALVANIZED SHEET TRADES IN 1922 ?

The prospects of the tinplate and galvanized sheet trades are brighter. Not much relief can be expected in the financial condition of the European Countries which continues to limit business, but the comparative low prices quoted at the end of 1921 will stimulate the demand.

TINPLATES AND GALVANIZED SHEETS.

TINPLATES.

The prediction made in the 1921 edition that the prospects of the tinplate and galvanized sheet trades would be poor has been fulfilled beyond all expectation. The year has been one of the worst for a very long period, and the depression has only been exceeded by that caused by the introduction of the McKinley and other tariffs by the United States in the nineties. The delay in deliveries brought about by the coal strike in October, 1920, gave foreign buyers an excuse to cancel the unexecuted portions of their high-priced contracts—heavy falls in prices and severe rises in foreign exchanges resulted in large shipments of tinplates being refused by buyers on arrival, which shipments had to be resold at considerable sacrifices. High costs of production helped to drive tinplates out of consumption with the result that many works, finding themselves without orders and with large stocks on their hands, had to close down. Consumers realising that the market was falling adopted a hand to mouth policy with regard to the limited quantity they had to purchase, and only bought their immediate requirements. From the beginning of the year the number of idle mills increased and the Coal Strike in April soon brought the remaining mills to idleness. This unfortunate dispute had one redeeming feature in enabling makers and merchants to clear their large stocks without reducing the prices to the low figure ruling at the time of writing. At the end of June, most of the stocks had been dispersed and a slight revival in the demand was noticeable, and makers were able to book orders for delivery in four to five weeks after the settlement of the Coal Strike. The trade was, fortunately, free from any serious labour troubles. The tinplaters, at the end of 1920, succeeded in obtaining from the masters the adoption of a wages sliding scale, under similar conditions to those conceded in the previous March to the steel workers, and based on the selling price of steel bars. This sliding scale was in operation from the commencement of the year, but the rapid fall in the price of steel bars has brought the wages down to such a level that the men have been compelled to ask the employers for some temporary concession to meet the high cost of living. The employers have agreed to a temporary concession of 10%.

At a lengthy meeting the men's representatives showed their full appreciation of the position and realised that the only way to resuscitate the industry was to reduce costs of production.

Trade Terms.

Before continuing with the recent developments and attempting to estimate the prospects of the trade, it appears desirable to define some of its many technical terms, for the convenience of the reader.

Tinplates are thin steel sheets rolled from steel of soft quality and coated with tin. There are several grades and numerous standard sizes of plates. Blackplates are the original steel sheets prepared for tinning. Terneplates are those coated with a mixture of tin and lead.

A standard or basis box of tinplates consists of 112 sheets of 20″ by 14″, weighing 108-lbs., about 30 gauge. Allowances are made for lighter substances and extras paid for heavier substances. 112 sheets of 28″ by 20″ are a double box and the price is double the standard box. Tinplates can be supplied in any sizes within reason to suit the consumer's need. The market quotation is for the standard box which is commonly called I C. Coke.

Charcoal plates carry a heavier coating of tin. Wasters are defective plates picked out from prime plates. Taggers are thin plates specially rolled from a dry steel down to 43 gauge.

Uses.

Tinplates are used for many purposes, of which the chief is in the making of tin cans, petrol tins, and containers for packing perishable goods, such as fruit, fish, meat, milk, etc. The great reduction in the price of tinplates and other metals will, when the general trade of the world becomes more normal, eventually cause the unsatisfactory containers, made of cardboard, with tinplate tops and bottoms, for the packing of jam and other foodstuffs, to be discontinued. The difficulties of getting supplies of tinplates during the war, and in the years 1919 and 1920, fostered the introduction of substitutes in the manufacture of cheap toys and household utensils, but now that ample supplies are available, a revival in the demand for tinplates is expected. Terne plates are largely used for packing Manchester and other cotton goods for export to tropical countries, and as soon as textiles improve a healthy demand will be created and the substitutes, such as wood-fibre and papier-mache, introduced during the period of high prices and scarcity, will be discarded, as they were easily damaged by the rough handling in transit, rendering many valuable consignments of goods useless.

Production and Consumption.

There are no periodical official figures giving details of the annual output of tinplates, etc., in this country. Several authorities estimate the outputs yearly, and their figures may be considered approximately correct. It has been estimated that the home consumption of tinplates, ternes and blackplates, in 1913, the last complete year before the war, was 255,790 tons, and the official export returns were 566,272 tons, making the total production approximately 825,000 tons, being the output of 82 works with 581 mills. By mid 1916 less than 400 mills were working, while in

1917 and 1918 the average number running probably did not exceed 250, owing to the curtailed supply of steel and the combing out of men for military service. The mills, being unsuitable for any other purpose, were kept idle. At the end of 1918 the bulk of the mills, about 517, were in a condition to restart, but not more than 303 were in operation in January, 1919, and 384 in December 1919. In 1920 the number of mills working reached 448 at the end of the year, but owing to the wholesale cancellation of orders not more than 209 were in operation at the end of January, 1921, and these were brought to a standstill by the Coal Strike, by the end of the first week in April. After the settlement of the strike in July, mills were rapidly restarted and by the end of August 226 were working. A continued improvement in the demand enabled this number to be increased to about 310 at the end of September, and 330 at the end of the following month—about 70 per cent. of the total available mills.

The estimated output for 1920 is as follows :—Home consumption, 221,435 tons ; export, 353,017 tons ; making a total of 574,452 tons. The figures for 1921 will be very difficult to estimate owing to the irregular working of the mills, but one thing is certain that the output will compare most unfavourably with that of previous years.

Foreign Competition.

The other home of the world's tinplate industry is, of course, the United States, which, although it only started production a little over a quarter of a century ago, produced in 1917 the record total of over 1,500,000 tons of tinplates and ternes, and in the same year displaced us in the premier position as exporters. In 1919, however, we regained our position with 289,761 tons compared with the American figure of 204,302 tons. The following are the detailed figures for 1918 and 1919 as compared with each of the preceding ten years :—

U.S.A. Tinplates Position.
(Gross Tons).

Calendar Years	Production	Add Imports.	Deduct Exports.	Approximate Consumption.
1907	514,775	57,773	10,203	562,345
1908	537,087	58,490	11,878	583,699
1909	611,959	62,593	9,327	665,225
1910	722,770	66,640	12,445	776,965
1911	783,960	14,099	61,381	736,678
1912	962,971	12,653	73,381	902,243
1913	823,719	21,815	47,274	798,260
1914	931,250	15,411	59,615	887,046
1915	1,080,000	2,305	154,541	927,764
1916	1,204,500	1,008	227,390	978,118
1917	1,544,000	124	233,300	1,310,824
1918	1,473,939	32	258,538	1,215,433
1919	1,150,898	224	204,524	946,598
1920	*1,425,000	350	215,000	1,110,350

* Estimated.

It will be seen that the pre-war high-water mark of production in the States was reached in 1912. That year's output was, according to Messrs. Sim and Coventry, obtained from under 400 mills—their heavier type and larger staffs enabling them to obtain a greater production per unit than Welsh makers do—while by the end of 1917, 488 mills were rolling, with a potential productivity of at least 1,600,000 tons per annum.

The world-wide depression has temporarily put an end to any further developments in the American industry, which has felt the slump as much as, or more than, Welsh works, and at the end of June only 33 to 35 per cent. of the mills were in operation and the stocks were valued at twelve million dollars.

With a full staff of men likely to be available at no distant date, it is believed that America could produce up to 1,750,000 tons of plates per annum—if she could be sure of finding a market for them.

By comparison with the United States and the United Kingdom, other countries produced little in pre-war times ; but already there are signs that in due season every country with an established iron and steel industry will have its complementary tinplate mills as a matter of course. The following tabulation is, however, a near approximation to the world's actual productive capacity with all mills at work :—

World's Present Productive Capacity.

	Tons.
United States	1,750,000
United Kingdom	1,000,000
Germany	100,000
France	40,000
Italy	30,000
Spain	20,000
Austria-Hungary	10,000
Norway	12,000
Total ..	2,962,000

Italy apparently kept up her old production during the war period, but naturally had no opportunity for expanding it, while France was cruelly handicapped by the long-continued German occupation of her principal iron region. Since the Central Powers do not produce tin themselves and can hardly have secured any substantial outside supplies, at any rate in the later stages of the war, it is inconceivable that they can have increased their productive capacity of plates to any extent.

In Europe a scheme was set on foot in the course of the war for the erection of tinplate works in Norway with an ultimate capacity of producing 30,000 tons per annum. These works commenced operations at the beginning of the year and completed their first important orders in June and July. The natural localities for the establishment of new mills are, however, in the Far East, and possibly, more remotely, in South America, where the world's chief sources of tin and ample supplies of steel lie near together.

Messrs. Sim and Coventry give a report that Japan, for example, is already erecting works with a capacity of 25,000 tons annually (about half her current rate of import from the United States), and that, moreover, the Japanese Government is said to be contemplating a national tinplate factory in a few years' time. The Burmah Oil Co., in conjunction with the Bengal Iron and Steel Co. and the Tata Iron and Steel Co., are erecting mills in India, and the machinery is being supplied by Welsh engineers.

American v. British Exports.

Although, as will have been already gathered, the United States has almost since the first days of the war more or less steadily increased its export trade at our expense, the foreign sales still represent only a small proportion of the Republic's annual production. The rate of export progress was temporarily arrested for some months after the States entered the war in April, 1917, and the entire shipments for the year 1917 only rose by some 6,000 tons, the bulk of the increase going to Canada. In 1918, however, an arrangement was concluded between the Allied Governments by which America undertook to supply for the time being the tinplates for certain of our foreign markets. Doubtless as a side-issue of this arrangement, we did not again have to bear the indignity of actually importing a small proportion of our own demands from the States. Previous to 1900, the export trade of the United States in tinplates was negligible and the rapid development of a protected industry is clearly shown.

The progress in these markets since that year is a serious menace to British manufacturers, and the following Table reveals the inroads into our trade during the last twenty-one years.

British and United States Tinplate Production and Exports Compared.

Year	UNITED STATES OF AMERICA.			UNITED KINGDOM.	
	Production.	Exports.	Imports.	(A) Production	Exports.
	Tons.	Tons.	Tons.	Tons.	Tons.
1900	302,665	Neglible	60,386	401,520	334,085
1901	399,291	439	77,395	427,360	316,928
1902	360,000	1,566	60,115	482,335	369,426
1903	480,000	292	47,360	529,765	338,460
1904	458,000	7,898	70,652	536,470	359,634
1905	493,500	7,941	65,740	569,760	354,864
1906	577,562	12,082	56,983	600,060	374,802
1907	514,775	10,203	57,773	632,460	405,328
1908	537,087	11,878	58,490	638,900	402,864
1909	611,959	9,327	62,593	677,240	439,747
1910	722,770	12,455	66,640	721,520	487,981
1911	783,960	61,381	14,099	749,540	484,331
1912	962,971	81,694	2,053	781,740	481,123
1913	823,719	57,812	20,680	750,280	494,497
1914	931,241	59,549	15,411	635,370	435,497
1915	1,055,936	154,642	2,350	610,880	368,602
1916	1,235,000	227,391	1,008	587,040	321,710
1917	1,512,146	232,799	124	386,530	177,383
1918	1,473,939	258,538	32	449,910	223,509
1919	1,150,898	204,524	224	519,460	289,761
1920	*1,425,000	215,000	350	574,450	353,017

* Estimated.

(A) All the figures relating to British Production are estimated by good authorities.

British Statistics.

The Government Control of the British Tinplate Trade during the war period—which was only relaxed when the Armistice was signed—make the figures of exports during that period unreliable for statistical purposes, as not only are the quantities bought on Government account excluded, but the special circumstances of licences, etc., and the arrangement with the United States, were artificial factors.

From the table of British Exports of Tinplates and Terneplates the interesting point is that the 1920 figures exceed those of the preceding three years.

The following figures show the exports of tinplates from this country monthly during 1919, 1920 and 1921.

	1919.	1920.	1921.
	Tons.	Tons.	Tons.
January	19,135	31,591	33,822
February	13,640	21,751	21,518
March	22,185	25,357	16,076
April	25,195	32,951	13,667
May	14,041	36,480	12,350
June	21,468	32,756	8,801
July	34,431	32,616	8,827
August	33,891	31,880	8,787
September	25,442	20,534	19,792
October	27,085	36,204	25,356
November	24,498	29,978	—
December	28,750	20,910	—
Total for Year	289,761	353,017	—

At the end of 1918 the stock of tin, terne and blackplates at Swansea had fallen to only 98,677 boxes and bundles, as compared with nearly 300,000 in the first months of the war, and about 340,000 at the end of 1913. By the end of December, 1919, however, the stock had recovered to 187,241 boxes. Twelve months later, December, 1920, it had fallen to 143,945 boxes, only to rise to 201,000 at the end of March last. The stock was reduced to 118,629 boxes in early July, after the settlement of the Coal Strike, but increased to 162,027 at the end of October.

British Exports of Tinplates and Tinned Sheets.

Exports to	EXPORTS IN TONS DURING TWELVE YEARS.											
	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921. (nine months)
Russia	13,023	8,224	9,675	9,921	8,957	2,313	4,947	346	Nil	1,303	1,504	24
Norway, Sweden and Denmark	28,054	35,555	45,151	38,138	*a*28,000	*a*38,510	*a*19,158	*a*6,780	*a*4,049	*a*20,164	*a*12,761	2,826
Germany and Holland	76,731	86,966	85,335	77,748	48,675	*e*27,908	*e*21,515	*e*6,571	Nil	*g*309 *e*16,032	*g*1,874 *e*21,598	*g*62 *e*13,684
Belguim and France	26,526	44,348	50,805	34,695	36,523	*f*59,744	*f*63,988	*f*37,877	*f*47,745	*h*8,761 *f*34,357	*h*17,032 *f*60,526	*h*5,629 *f*4,467
Roumania	17,689	30,379	35,922	10,927	17,512	1,181	21	Nil	Nil	2,574	1,004	2,249
Canada	25,741	12,426	7,297	9,889	8,246	2,664	755	1,414	107	500	957	1,366
U.S.A.	73,619	13,997	2,135	21,516	17,468	1,014	838	82	Nil	254	625	654
South America ..	40,514	37,693	24,351	39,196	*b*7,789	*b*10,558	*b*8,725	*b*13,880	*b*21,307	*b*5,701	*b*1,148	*b*879
India, Hong Kong and Straits Settlements	57,932	63,331	59,866	74,398	*c*70,130	*c*47,588	*c*31,116	*c*28,052 1,911	*c*28,165 6,386	*c*33,760	*c*51,559	*c*27,894
China and Japan ..	29,265	34,300	32,838	43,791	*d*48,012	*d*29,803	*d*27,982	—	—	*d*20,757	*d*27,076	*d*18,800
Australia	28,978	34,289	29,201	28,961	31,357	41,483	41,512	17,426	44,288	36,033	47,336	14,522
Other Countries ..	64,909	82,623	98,797	105,317	111,928	105,982	101,133	63,044	71,462	108,957	108,017	50,584
Total	482,981	484,331	481,123	494,497	435,392	368,778	321,710	177,383	223,509	289,462	353,017	143,640

(*a*) Norway only. (*b*) Argentine Republic only. (*c*) British East Indies only. (*d*) Including Hong Kong.
(*e*) Netherlands only. (*f*) France only. (*g*) Germany only. (*h*) Belgium only.

Prices and Prospects.

It was predicted in our last edition that the demand for tinplates would be poor and that prices would be much lower. The price of tinplates at the end of December was 37s. to 38s. per box, and in the absence of buyers must be considered nominal. Makers having huge stocks and being short of orders, commenced to close down mills, and endeavoured to stabilise the price at about 36s. to 37s. This they managed to do until the end of February, when Belgian steel bars came on the market at £4 per ton less than the local product, and tinplates fell to about 28s. The coal strike in April brought all the works to a standstill, and the stocks in the hands of the makers began to find a ready sale at about 28s.; with further reductions in the price of foreign steel, which was available at £7 10s. per ton at the end of June, the price fell to 26s. The Welsh steel makers began to realize the seriousness of foreign competition and commenced reducing their figures to £8 10s. in August, £8 5s. in October, and £7 15s. at time of writing. These reductions brought the effects of the sliding scale into operation, and with lower wages and cheaper steel lower prices were quoted by makers to stimulate business, and at the end of October plates were obtainable at 21s. At this figure the price of tinplates was little more than 50% above pre-war prices, and an immediate demand was created and at the time of writing plates for prompt delivery are difficult to obtain and the price is 21s. 6d. to 22s.

In the tinplate industry employers and employed have fully realised that demand is dependent upon a low price; manufacturers have been selling below cost, but by doing so they have created a real demand which is gradually increasing, and by the end of the year the production in South Wales is likely to equal any figure of production during the war.

At reasonable prices the consumption of tinplates is constantly increasing. If manufacturers in Wales can keep down costs of production and the costs of transport by rail can be reduced, there is every prospect of their being able to meet any foreign competition in most markets. The revival in demand is apparent. Foreign orders are now coming in more freely from neutral markets where American and German competition is losing ground. It is stated that a large order was obtained from British Columbia, in spite of keen American competition. The outlook for 1922 is far brighter than could have been anticipated a few months ago.

GALVANIZED SHEETS.

The galvanized sheet trade was very depressed during 1921. Towards the end of 1920 the demand began to fall away and works were receiving wholesale cancellations of undelivered portions of their high-priced contracts. In January, the demand became poor and prices began to fall from £29 per ton basis for 24 G. corrugated sheets in bundles, to £25; in February, £24; March, £23; and gradually to £21 at the beginning of September, when the demand made a temporary spurt. However, the demand fell away again at the end of October, when the price was reduced to £18 10s. per ton to correspond with the big reduction in the cost of steel.

This particular branch of the iron and steel industries is almost entirely dependent on export, and the financial difficulties of the chief importing countries reduced the demand to small proportions. The year's exports make very poor reading compared with the record of 1913, which amounted to 762,070 tons.

The export trade was entirely upset during the war owing to the demands made on the industry by the Ministry of Munitions, and in the first complete year (1919) after the war the exports amounted to 186,101 tons. This amount was greatly increased in 1920 to 410,932 tons, the chief importing countries being Japan, 29,477 tons; Argentine, 50,214 tons; British South Africa, 34,545 tons; India, 72,469 tons; Australia, 59,724 tons; New Zealand, 23,025 tons; Dutch East Indies, 18,163 tons.

The exports for the nine months to September 30th, 1921, are a true index of the state of this trade and clearly show its depressed condition. The figures are as follows:—Up to 30th September, 1921, the total exports amounted to only 93,611 tons, the principal importing countries being Japan, 5,062 tons; Argentine, 8,569 tons; British South Africa, 5,188 tons; India, 25,254 tons; Australia, 16,889 tons; New Zealand, 3,342 tons; Dutch East Indies, 2,892 tons.

Galvanized sheets are thin sheets of steel rolled from a similar bar to that used in the manufacture of tinplates, and coated with zinc. The bar is generally 8 to 10 in. wide, and of varying thickness according to the gauge of the sheet required. The chief uses to which this commodity is put are for sheds, factories, roofs, etc., in tropical or dry countries where good building materials are scarce. Galvanized sheets are, owing to lightness and portability, especially suitable for these countries where means of transport are limited and costly.

Most of the works are short of orders with only sufficient to carry them on to the end of the year, but the recent reductions in prices will stimulate a moderate demand. The tinplate and galvanized sheet trades are the brightest spots in the steel industry to-day, mainly owing to the fact that selling prices have been reduced to about 50 per cent. above pre-war prices.

The financial stringency is still acute in many of the importing countries, but this reduction in price has improved the situation from a buyer's point of view. American competition may be felt later, but at present is not keen.

Section VII.

THE MONEY MARKET.

THE MONEY MARKET.

WHAT IS THE OUTLOOK FOR 1922?

For the whole of the year money rates will be somewhat lower than those ruling at the end of 1921, but towards the close of the period the decline will become less pronounced in the event of there being unmistakable signs of a recovery in trade.

The Government will continue a large borrower, by reason of the fact that there must be a considerable Budget deficit. In these circumstances there can be little, if any, reduction in taxation.

Assuming continuance of the present quiet trade conditions, with the consequent piling up of unemployable balances, a new large funding loan may be brought forward.

There will be no further appreciable decline in the wholesale prices of commodities generally, and in some directions a recovery is likely.

THE MONEY MARKET.

A General Survey.

The unpleasant process of deflation, which set in acutely towards the end of 1920, continued with little intermission throughout the past year. The market prices of speculative securities further shrunk until in many cases they stood at only one-third or one-quarter the best figures reached in 1920, to say nothing of what happened to the shares of undertakings which came to grief completely; the value of all classes of commodities declined in a marked degree, although retail charges, generally speaking, lagged far behind in the movement; and despite the continuance of an acute shortage of housing accommodation, the property market became comparatively dull and inactive, war profits and bonuses being no longer available for the payment of fancy prices. The last-named factor also had a marked effect upon the motor and other more or less luxury trades. The realisation of stocks both of raw materials and of manufactured goods accumulated for war purposes, or by speculators, reduced the demand for supplies of fresh products.

As a result of these conditions, in conjunction with the state of the exchanges and other adverse influences, unemployment became rife, there being at one time 2,000,000 on the books of the Employment Exchanges. The United States, which benefitted financially from the war, has had 5,000,000 people out of work—a much larger proportion than Great Britain; it is ironical that in Germany unemployment is a negligible quantity. At the moment of writing the mark is about 1,200 to the £, and Europe would seem to be drifting towards a financial collapse. Only the cancellation of war indebtedness and the establishment of some international credit scheme can avert disaster.

For the British Budget of 1921 responsibility is divided between Mr. Austen Chamberlain, who framed it, and Sir Robert Horne, upon whom fell the duty of carrying out the programme. The revenue for the financial year ending March 31st, 1922 was estimated at £1,216,665,000, and the expenditure at £1,039,728,000, leaving a surplus of £176,922,000, comparing with £230,557,000 for the preceding year, when both income and expenses were placed at a higher figure. No new taxes were imposed, and none remitted or reduced; an increase in certain postal charges was, however, made. For the first quarter of 1921-22 the revenue failed to cover expenditure by £67,251,900, and for the second quarter by £41,830,700. Thus the allowance of £97,000,000 for unforeseen expenses during the whole period was more than swallowed up in the first half. Somewhat tardily the Government awoke to the seriousness of the position, and a Committee was appointed, under the Chairmanship of Sir Eric Geddes, for the purpose of ascertaining in what directions economies could be effected. In the face of the heavy falling off in the receipts, especially from taxation, it is obvious that severe cuts in outlay must also be made. Of course, expenditure has been swollen by the measures taken in connection with the coal strike, and by the much-abused unemployment dole.

The Bank Rate has been reduced 2 per cent. by easy stages. From 7 per cent., at which it stood between January 25th and April 27th, the rate was on the latter date reduced by $\frac{1}{2}$ per cent.; a further like amount was taken off on June 29th and again on July 20th, and on November 3rd the rate was —somewhat tardily—fixed at 5 per cent., the change once again immediately following a drop in the rediscount rate of the Federal Reserve Bank of New York. The fresh reduction was welcomed as likely to stimulate industry, but it is doubtful whether much effect will be exerted in the prevailing conditions. The concomitant cut in bank deposit rates may, however, give a fresh impetus to the demand for gilt-edged investments which has been a feature of the recent past. At the moment the motto of the investor is "Six per cent, and Safety!" From £5 19s. 4d. in respect of the first allotment of Treasury Bills on the re-introduction of the system in April, the average rate declined to about $3\frac{3}{4}$ per cent., the minimum being £3 13s. 8·38d. per cent. in respect of the £60,000,000 offered on the 21st October. The series was terminated with the offer of the 30th November.

In the return of the Bank of England to November 3rd, the proportion of reserve to liabilities stood at 15·3, as against the maximum for the nine months of 18·6 per cent. on September 28th, and the minimum of 11·4 per cent. on July 20th. The currency note circulation stood at £311,824,700, or £5,130,547 below the maximum for the year. At £29,435,778,000, the London Bankers' clearings for the period from the beginning of 1921 showed a decrease of £3,753,567,000.

During the year under review measures were taken by the Government for the reduction of the floating indebtedness. In April an offer was made to holders of 5 per cent. National War Bonds falling due within the ensuing four and a half years to exchange into a 3½ per cent. Conversion Loan, which will be redeemable at par only on the option of the Government after April 1st, 1961, at three months' notice. The nominal amount of War Bonds acceptable for conversion under this scheme was £645,000,000, and in the event of the whole amount being surrendered the nominal amount of the new loan would have been £1,024,000,000 and the interest payable £35,500,000 per annum, or £4,000,000 more than previously. The public response was disappointing, no more than £163,328,100 of the old issues being presented for conversion, equivalent to £264,889,200 of Conversion Loan.

In July an offer was made to holders of Exchequer Bonds 1921 and National War Bonds 1922 and 1923, to exchange into a new issue of 5½ per cent. Treasury Bonds. In this case the response was even more unsatisfactory, only about £90,000,000 being presented out of an outstanding aggregate of nearly £500,000,000. It is true that the terms offered were by no means attractive.

On October 3rd, a new series of 5½ per cent. Treasury Bonds (" B ") was placed on sale, the issue of the " A " series being withdrawn; the offer produced over £135,000,000, including £89,000,000 of conversions. The price of issue of the " B " series was raised to 98 per cent. Like the first series, these bonds are repayable at par on April 1st, 1929. The interest on the bonds is exempt from corporation profits tax, and the bonds are convertible at the holders' option, as on April 1st, 1922, or October 1st, 1922, into 3½ per cent. Conversion Loan at the rate of £146 Conversion Loan for each £100 bonds converted. Notification of desire to convert must be made one month beforehand in the prescribed form. The first dividend on the new series will be payable on April 1st, 1922, and will represent interest to that date from the date of application. The bonds are issued in denominations of £50 up to £5,000. On March 2nd, 1922, holdings of bonds of this series will be amalgamated with those of the previous series. The following table shows the prices of certain Government loans respectively on 12th July, when the first series of Five and a Half per Cent. Treasury Bonds was put on tap; on 3rd October, when the "B" bonds, which were purchasable until the end of November, were first made available; and on the 25th November :—

	12th July.	3rd Oct.	25th Nov.
Natl. War 5% 1922 ..	$100\frac{3}{4}$	$101\frac{3}{4}$	$102\frac{1}{8}$
Do. 5% 1929 ..	$97\frac{1}{2}$	98	$99\frac{1}{4}$
War Loan $3\frac{1}{2}$% ..	$87\frac{1}{2}$	88	90
Do 5% ..	$88\frac{11}{16}$	$88\frac{11}{16}$	$88\frac{11}{16}$
Funding 4% ..	$70\frac{3}{4}$	$71\frac{5}{8}$	$73\frac{1}{8}$
Victory 4% ..	$76\frac{3}{4}$	$75\frac{3}{8}$	$79\frac{3}{8}$
Consuls $2\frac{1}{2}$% ..	$47\frac{3}{4}$	$48\frac{3}{4}$	$49\frac{1}{8}$

* $2\frac{1}{2}$ per cent. deducted.

Slightly in advance of the reduction in the Bank Rate, the rate on Treasury Bills was reduced (on March 11th) by $\frac{1}{2}$ per cent to 6 per cent., the new feature being simultaneously introduced of the offer of three and twelve months' bills on precisely the same terms. (Particulars of the amounts issued week by week, and the average rates, are given in the supplementary statistics.)

The trend of affairs in regard to money rates is illustrated by the fact that recent Colonial borrowings have been arranged at $5\frac{3}{4}$ per cent. as against 6 per cent. earlier in the year, while Corporation issues at the latter rate have been over-subscribed. A side-light is supplied by the increase in the sales of National Savings Certificates, the total of 1,429,500 for the week ended the 29th October being the largest for more than eighteen months.

New Capital Issues.

As only to be expected in the conditions which have prevailed, invitations for the subscription of capital during the period under review have been on a very different scale from those of 1920, and their nature has been very different also. Of the issues of the first nine months of 1921, £47,429,300, or 31·8 per cent. were Government Securities (irrespective of Treasury Bills, Treasury Bonds, and Savings Certificates); £20,742,250 net, or 14 per cent., Corporation stocks and the like; £34,775,700, or 23·3 per cent., commercial. In respect of the first three quarters of 1920 the percentages were 2·7, 15·2, and 46·1 respectively.

Below is an analysis of the issues, month by month, since and including September, 1920 :—

CAPITAL ISSUES.

	British Isles.	British Empire.	Foreign.	Total.
1920.	£	£	£	£
September ..	15,609,681	1,657,094	353,500	17,620,275
October ..	24,297,126	3,510,000	1,176,451	28,983,577
November ..	23,331,678	8,636,500	3,132,000	35,100,178
December ..	4,061,281	3,517,905	8,147,418	15,726,604
1921.				
January ..	13,612,486	5,190,786	110,000	18,913,272
February ..	7,005,827	3,741,725	260,000	11,007,552
March ..	17,577,756	1,785,875	6,063,000	25,426,631
April ..	5,103,084	8,158,500	2,389,050	15,650,634
May ..	9,410,465	5,414,915	3,977,500	18,802,880
June ..	16,808,182	16,238,560	1,170,000	34,216,742
July ..	7,913,243	2,322,870	80,000	10,316,113
August ..	1,176,412	2,246,665	—	3,423,077
September ..	3,801,577	6,628,753	1,067,500	11,497,830
Total (nine months, 1921)	82,409,032	51,728,649	15,117,050	149,254,731
Total (nine months 1920)	266,069,751	27,881,582	8,795,731	302,747,064

While the past year's subscriptions aggregate less than half those of the 1920 period, there is the feature that the amount definitely earmarked for employment in the British Isles is only about 31 per cent. of the former quantity, while that for the British Empire has more than doubled. The money raised for authorities or companies abroad shows a somewhat similar increase. In all probability a large proportion of this will be employed in the purchase of services or materials in the United Kingdom.

Gold and Silver.

The price of gold as measured in British currency during 1921 failed to follow a curve corresponding to that of 1920. From the high level reached at the end of that year the price sharply relapsed, recovered in the height of the holiday season, and then declined to a lower level than had been touched since April, 1920. The tendency is illustrated by the standard adopted by the Transvaal gold mining companies in valuing their outputs (per fine oz.) :—

	£	s.	d.		£	s.	d.
November, 1920 ..	5	17	6	May, 1921 ..	3	3	9
December, „ ..	5	19	0	June, „ ..	5	12	6
January, 1921 ..	5	5	0	July, „ ..	5	12	6
February, „ ..	5	4	0	August, „ ..	5	11	6
March, „ ..	5	3	9	September, „ ..	5	10	0
April, „ ..	5	3	9	October, „ ..	5	3	0

The October valuation was placed at a somewhat low figure to compensate for the optimistic basis adopted in respect of the two preceding months. More recently (early November) the actual figure has ranged between £5 4s. 0d. and £5 5s. 0d. As shewn by the supplementary statistics at the end of the book, the output of gold has been on the down-grade since 1912. For that year the value totalled £99,000,000 as against £77,528,000 in respect of 1918, when the ounces totalled about 18½ millions.

Following the rally which occurred towards the close of 1920, the price of silver sagged away until, on March 5th, it reached the low level for 1921 of 30⅝d. The principal cause of the decline was the sudden setback in the trade prosperity of India and of the Far East generally, coupled with the amount of the metal released by the dilution of our own subsidiary coinage—a measure adopted also by most of the principal European countries. After July, however, the trade balance again turned in favour of India; a demand for China sprang up; while the quantity of silver released through the substitution of nickel in our own coinage was largely absorbed.

Had production remained on its former scale, this would have exerted little effect, especially if the hopes of a considerable increase in the Mexican output had been justified. Unfortunately, the Mexican situation did not improve to the extent anticipated. At the same time, owing to the closing down of copper and other mines in which silver is an important by-product, the output from the United States, which normally produces about one-third of the world's total supply, was materially reduced. Hence in September the price of the metal spurted, touching 43⅜d. on the 27th, from which there has since been some reaction, due to sales by Eastern speculators in conjunction with the weakness of certain exchanges.

Opposite is a tabulation of the production of silver by the principal countries of yield yearly since 1901 :—

Production of Silver.

Period.	United States.	Mexico.	Australia.	All Other Producers.	Total.	Total Values.
	Ounces.	Ounces.	Ounces.	Ounces.	Ounces.	£ [a]
1901	55,214,000	57,656,549	10,230,046	49,910,688	173,011,283	19,598,934
1902	55,500,000	60,176,604	8,026,037	39,060,842	162,763,483	16,318,731
1903	54,300,000	70,499,942	9,682,856	33,206,394	167,689,192	17,292,944
1904	57,682,800	60,808,978	14,558,892	31,144,596	164,195,266	18,044,172
1905	56,101,600	65,040,865	12,561,600	35,884,774	169,588,839	19,652,872
Total 1901-05	278,798,400	314,182,938	55,059,431	189,207,294	837,248,063	90,908,653
1906	56,517,900	55,225,268	14,237,246	39,660,226,	165,640,640	21,308,978
1907	56,514,700	61,147,203	19,083,031	48,269,689	185,014,623	23,271,622
1908	52,440,800	73,664,027	17,175,099	59,906,444	203,186,370	20,626,116
1909	54,721,500	73,949,432	16,359,284	66,185,417	211,215,633	20,846,543
1910	57,137,900	71,372,974	21,545,828	72,822,660	222,879,362	22,926,393
Total 1906-10	277,332,800	335,358,904	88,400,488	286,844,436	987,936,628	108,989,652
1911	60,399,400	79,032,440	16,578,421	69,362,583	225,372,844	23,094,547
1912	63,766,800	74,640,300	14,737,944	71,165,610	224,310,654	26,198,781
1913	66,801,500	70,703,828	18,128,577	68,273,938	223,907,843	25,714,416
1914	72,455,100	27,546,752	3,573,077	57,051,090	160,626,019	16,941,026
1915	74,961,075	39,570,151	4,295,755	60,023,519	178,850,500	17,605,596
Total 1911-15	338,383,875	291,493,471	57,313,774	325,876,740	1,013,067,860	109,554,366
1916	74,414,802	22,838,385	4,063,300	59,861,413	161,177,900	21,029,686
1917	71,740,400	35,000,000	4,070,800	57,447,400	168,258,600	28,639,016
1918	67,810,139	62,225,344	9,934,354	57,567,800	197,537,637	39,112,452
1919	56,682,445	62,681,987	7,430,770	47,722,212	174,517,414	41,449,848
1920 (est.) ..	56,564,504	63,750,000	7,400,000	48,000,000	175,714,504	47,589,282
Total 1916-20	327,212,290	246,495,716	32,899,224	270,598,825	877,206,055	177,820,284

[a] Values of silver in this Table are *commercial* values and are computed on the average price each year of silver as given by Messrs. Samuel Montagu & Co., London.

The purchases made by the United States Government under the Pittman Act enabled the British Government to buy some 208,000,000 ounces of silver at the fixed price of a dollar an ounce during the critical period in 1918. The silver so acquired represented mainly the reserve held against Silver certificates and had to be replaced, the agreement being that producers should be paid at the same rate. According to a recent statement by Senator Pittman, some 50,000,000 ounces have been replaced so far, but purchases are still going on, and there is thus an artificial price so far as American producers are concerned. Senator Pittman expresses the view that the value of the metal will ultimately advance to above the dollar level, but this ignores the possibility of a revival of activity in copper and lead mines and the rather transitory character of the recent demand for monetary purposes in India and the Far East.

The Course of Trade.

A combination of adverse circumstances brought about a shrinkage in the trade of the United Kingdom.

Unquestionably, the dominating factor has consisted in the condition of the exchange rates as between Great Britain and the countries with which she contracts the bulk of her business ; the condition of the exchanges has compelled former large customers severely to restrict their purchases. The disastrous coal strike inflicted a further heavy blow on the industry of the country.

Another hindrance to trade has been the caution induced in buyers by falling markets, coupled with the

difficulty experienced by manufacturers in adjusting costs of production to lower prices. When the question of wage reduction was first mooted, it was described in some labour circles as " an attack upon the workers' standard of living." With the progress of time, however, and under the pressure of economic realities, a more reasonable view began to find a wide acceptance. Mr. T. A. Appleton, of the General Federation of Trade Unions, gave clear expression to moderate opinion on the situation—" Revolution had done nothing towards putting the worker in control of industry. He wished to see the workman receive the highest possible wage, constantly raising his standard of living. But wages must be based upon the value of the things we produced, and this value was determined—not by the employer or the Government, but by the purchasers, and most of the latter lived outside the area of our political and commercial control."

An important contribution to the solution of the present industrial problem was made by Lord Weir, who in laying stress upon the need for cheapening the cost of production, urged that endeavours should first be made to attain this end by the abolition of trade union restrictions, leaving the question of wages revision to the last.

Wage cuts proposed by the employers have been more or less readily accepted by various classes of workers, and altogether it would seem that the realities of the situation are at length receiving recognition.

The Trade Balance.

The Board of Trade Returns show that in January, 1920, our imports reached 183½ millions and our exports totalled over 131¼ millions sterling. From that time, with occasional rallies, the tendency for about eighteen months was downwards, as will be seen from the appended figures :—

Imports.

	1914.	1919.	1920.	1921.
	£	£	£	£
January ..	68,005,009	134,518,054	183,498,388	117,050,783
February ..	62,053,651	107,073,399	170,514,272	96,973,711
March ..	66,947,315	105,722,289	176,647,715	93,741,654
April ..	61,626,830	112,210,747	167,154,309	89,995,504
May ..	59,099,290	135,657,051	166,333,816	86,308,308
June ..	58,281,653	122,945,655	170,491,230	88,182,481
July ..	59,376,484	153,140,032	163,342,351	80,757,174
August ..	42,342,707	148,832,393	153,254,578	88,581,040
September	45,006,607	148,625,074	152,692,339	87,118,507
October ..	51,379,435	153,486,162	149,889,227	—
November ..	55,518,130	143,565,000	144,260,183	—
December ..	67,316,898	169,735,141	142,785,245	—

Total Exports (including Re-exports.)

	1914.	1919.	1920.	1921.
	£	£	£	£
January ..	57,403,108	51,903,300	131,344,386	102,711,213
February ..	51,490,778	52,034,078	108,567,919	76,226,034
March ..	54,054,956	62,057,770	130,730,738	75,696,966
April ..	50,736,066	71,828,870	126,659,111	68,391,247
May ..	52,422,709	75,840,000	139,579,500	50,320,254
June ..	48,626,410	76,526,425	136,476,278	45,235,002
July ..	52,231,296	77,072,805	155,300,383	52,533,955
August ..	28,631,104	90,084,522	128,271,682	61,344,086
September ..	31,948,142	82,249,306	130,806,521	63,842,222
October ..	35,781,672	98,702,747	128,429,034	—
November ..	30,244,596	107,377,000	132,479,853	—
December ..	32,149,474	117,018,164	109,329,579	—

Trade Balances.

	Year 1914.	Year 1919.	Year 1920.	Year 1921. (to end of September).
	£	£	£	£
Imports	696,635,113	1,626,156,212	1,936,742,120	827,673,470
Exports (including re-exports) ..	526,195,523	963,384,677	1,557,974,984	596,300,979
Adverse Balance	170,439,590	662,771,535	378,767,136	231,372,491

Low-water mark was reached as regards imports in July and as regards exports in June, 1921. In the case of exports there is the satisfactory feature that the fresh expansion in September was achieved in the face of a decline of 1¼ millions in the re-exports, the exports of home produce totalling 55¼ millions against rather more than 51¼ millions for August and 38 millions odd in June. A further improvement was recorded in October. In looking at these figures it is, of course, necessary to bear in mind the fall in values, which has accentuated the apparent decline in trade as well as diminishing the apparent recovery.

For the first nine months of 1921 our total exports showed a drop of £488,616,700 compared with those of the corresponding period of 1920, the figures being £518,661,300 and £1,007,278,000 respectively. In respect of articles wholly or mainly manufactured in the United Kingdom the decrease was £402,639,500, the value being £439,879,200. For the first nine months of 1913 the total under this heading figured at

£311,217,100. Bearing in mind the difference in values prevailing over the two periods, it will be seen that there is much leeway to be made up.

The following table setting out in respect of thirteen representative manufactures the quantities sent abroad during the first nine months of 1921 and 1920 in contrast with the corresponding period of 1913, is an interesting commentary on the present position :—

ARTICLE AND QUANTITY.	1913.	1920.	1921.
Tobacco and Snuff .. lbs.	23,830,378	25,201,748	13,390,235
Coal .. .. .. tons	54,517,788	19,851,555	13,351,554
Wool and Woollen Rags „	152,572	84,622	31,976
Cement .. .. .. „	587,353	454,596	231,282
Iron and Steel Manufactures .. .. „	850,859	498,775	99,937
Galvanised Plates and Sheets .. .. „	561,637	343,996	93,611
Electric Glow Lamps.. No.	2,329,587	2,474,757	4,567,981
Cotton Yarn .. .. lbs.	154,761,700	118,447,700	90,592,600
All Piece Goods* .. yards	5,350,278,900	3,540,677,100	1,866,341,100
Woollen Tissues* .. „	81,997,400	151,721,800	55,449,900
Linen Manufactures .. „	142,307,300	81,827,400	24,720,900
Soap .. .. .. cwts.	1,359,716	1,599,589	596,285
Printing Paper .. „	1,489,737	679,841	565,323

* Square yards 1920 and 1921.

The statistics of trade balances indicate that progress is being made in the rectification of the adverse balance, which reached its maximum in 1919. Against the visible deficiency has to be placed the invisible receipts in the shape of dividends and interest on foreign investments, freights, insurance profits, banking charges, etc. These were formerly reckoned to amount to something like £200,000,000. Owing, however, to the change

in the shipping position, and to the large realisation of foreign investments made during the war, these invisible receipts are now on a much reduced scale. For 1913 the visible deficiency was only £84,640,700.

The Foreign Exchanges.

In financial and trading circles 1921 will long be remembered as the year wherein the rate at which the currency of one country could be converted into that of another assumed a degree of importance never previously approached. By reason of the heavy premium on sterling, former customers of Great Britain were obliged to supply their requirements elsewhere ; and the anomaly arose that the especially severe depreciation in the value of the mark gave Germany a great advantage in the bulk of the world's markets. In many cases German firms have been able to tender at prices ranging from two-thirds to one-third of the lowest British quotation. Even more inimical to business than the rates themselves were sometimes the violent fluctations.

In his speech at Inverness on October 4th, the Prime Minister made the following very apposite remarks :—"It is worth your while looking at the table of the exchanges of Europe day by day. You will then begin to realise how difficult it is to do business. Take a few of them. In Paris, where the sovereign fetched about

25 frs. before the war, it now stands at 52 frs. In Rome the lira stood at 25 to the sovereign before the war and now stands at 90. It stood at 90 on 23rd September; it stood at 94 on 30th September. It altered 4 points in a single week. Before the war 20 marks would purchase a sovereign. A year ago the sovereign fetched 212 marks; last week the sovereign would fetch 437 marks. Take Poland—the mark before the war stood at 20 to the sovereign; a year ago it stood at 900 to the sovereign. Last Saturday you could get 22,000 marks for the sovereign. Yesterday it came down to between 20,000 and 21,000. Thus it varied between 22,000 and 20,000 in the course of a single week, and it fluctuated to the extent of 1,000 in a single day. Take Vienna, where the kronen was 24 to the sovereign, a year ago it stood at 820. Last week it stood between 5,100 and 5,500, a difference of 400 in a single day. You cannot do business so long as you have those conditions. If it remained at 20,000 or at 5,000, or at 90, then you could do business. But when you are buying and selling in these countries you are not buying or selling across the counter. You enter into contracts for weeks, months, and sometimes for years. How can you face prices either as a purchaser or as a seller when there are fluctuations of such an enormous character in a single day?—in a single year in Poland the mark goes up from 900 to 22,000 to the sovereign, and it is quite impossible to do business."

Appended is a contrast of the rates on the principal centres on November 4th with those of a year ago (where available):—

Town.	Method of Quoting.	Normal Rate.	November 4, 1921.	November 5, 1920.
Paris, cheques ..	*Francs to £1	25·22½	53·40–53·45	56·60–56·65
Berlin	Marks to £1	20·43	910–920	278–279
Brussels, cheques ..	Francs to £1	25·22½	55·15–55·17	53·35–53·40
Amsterdam, cheques	Florins to £1	12·107	11·39–11·41	11·31–11·32
Italy, sight ..	Lire to £1	25·22½	96⅝–96⅞	97·00–98·00
Greece	Drachmae to £1	25·22½	94½–95½	36·40–36·80
Madrid, sight ..	Pesetas to £1	25·22½	29·07–29·12	25·35–25·40
Lisbon, sight ..	Pence to escudo	53¼d.	5d–5½d.	9*d.*–9½*d.*
Switzerland, sight..	Francs to £1	25·22½	21·13–21·17	21·97–22·00
Christiania, sight ..	Kroner to £1	18·159	28·90–28·95	25·55–25·60
Stockholm, sight ..	Kroner to £1	18·159	17·03–17·06	17·89–17·91
Copenhagen, sight	Kroner to £1	18·159	21·20–21725	25·35–25·45
Helsingfors ..	Marks to £1	25·22½	230–233	152–154
Bucharest	Lei to £1	25·22	850–870	219–221
Prague	Kr. to £1	24·02	420–430	305–310
Warsaw	Mks. to £1	20·43	10,000–11,000	11·30–11·70
Vienna	Kr. to £1	24·02	10,500–11,500	11·20–11¼40
Budapest	Kr. to £1	24·02	3,150–3,300	—
Belgrade	Din. to £1	25·22½	305–315	—
Sofia	Leva to £1	25·22½	600–650*	—
Constantinople ..	Pstrs. to £1	110	720–760	—
Alexandria, sight ..	Piastres to £1	97½	97$\frac{5}{16}$–97⅝	97¼–97¾
Bombay, T.T. ..	Sterling to rupee	1*s.* 4*d.*	16⅜*d*–16½*d.*	1*s.* 8*d.*–8½*d.*
Calcutta, T.T. ..	Sterling to rupee	1*s.* 4*d.*	16⅜*d.*–16½*d.*	1*s.* 8*d.*–8½*d.*
Hong-Kong, T.T. ..	Sterling to dollar	—	32¾*d.*–33¾*d.*	3*s.* 11¼*d.*–4*s.* ¼*d.*
Shanghai, T.T. ..	Sterling to tael	—	46*d.*–47¾*d.*	5*s.* 4*d.*–5*s.* 5½*d.*
Singapore, T.T. ..	Sterling to dollar	—	27$\frac{27}{32}$*d.*–27$\frac{31}{32}$*d.*	2*s.* 3$\frac{11}{16}$*d.*–$\frac{31}{32}$*d.*
Yokohama, T.T. ..	Sterling to yen	24.58*d.*	29⅛*d.*–29⅜*d.*	2*s.* 11¼*d.*–11¾*d.*
New York, cable ..	Dollars to £1	4.86⅔	3·94–3·94½	3.41½–3.42
Montreal, cable ..	Dollars to £1 ..	4.86⅔	4·27–4·28	3.78–3.80
Rio de J., 90 days ..	Pence to milreis	16*d.*	8$\frac{3}{16}$d.	12$\frac{9}{16}$*d.*
Buenos Aires, T.T.	Pence to dollars	47.58*d.*	44¼*d.*—44¾*d.*	55¼*d.*–56¼*d.*
Valparaiso, 90 days	Pence to dollars	—	35·10	9⅞*d.*
Montevideo, T.T. ..	Pence to dollars	51*d.*	40½*d.*–41½*d.*	56½*d.*–57½*d.*
Lima	Eng. to Peru £1	par.	11½% prm.	†21% prm.
Manila	Dollar	24.066*d.*	2*s.* 5½*d.*	—
Mexico	Dollar	24.58*d.*	32¼*d.*–33¼*d.*	—

Premium on gold at Lisbon 850%. * Discount at 90 days.
† Nominal.

Some noteworthy changes appear. Perhaps the most interesting feature is the depreciation in the Central European rates and in that of Greece—the latter due partly to that country's foolish political policy. Most of the American rates have moved in favour of those countries, but the United States dollar is not worth quite so much in sterling as it was twelve months ago.

During the first week of November a sensational collapse occurred in the mark, transactions at the rate of 1,000 to the £ being mentioned on Friday, the 4th. The depreciation was attributed to preparations for the reparations payment due on the 15th; to provision for the purchase of raw material; to the country's unstable condition, both internally and internationally; to French fears that, with a view to flouting the Allies, Germany was encouraging rather than endeavouring to check the depreciation in her currency; and to speculation.

As tending to support the belief just referred to it may be mentioned that in the first week of November the Reichsbank issued 3,383,484,000 paper marks, bringing the total up to 91,527,679,000 marks. There were also discounts and Treasury Bills to an even larger amount. The inflation of the currency, however, not only encouraged wild speculation on the part of the Germans themselves in securities, property and commodities, causing a general advance in prices, but tempted large purchases on the part of foreigners with currency in their favour. Hence it may prove much in the nature of a boomerang. The following table gives the lowest values each month from May to October :—

	Marks to £		Marks to £
May	269½	August	332½
June	282¾	September ..	475
July	292½	October	740

The highest price touched in 1921 was 212½ to the £ during January, and the lowest about 1,250 in November.

Below are set out some of the latest Central and South American exchange rates as supplied by the Commercial Bank of Spanish-America :—

PLACE.	Method of quoting.	Par of exch.	Prev. rate.	Latest rate.	Date.
Ecuador ..	Sucres to £1	10·00	14·80	15·80	19th Nov.
Venezuela ..	Bolivares to £1.	25·25	23·00	23·20	16th Nov.
Colombia (Bogota)	Dollars to £20	100	89·50	90·00	22nd Nov.
Nicaragua ..	Cordobas to £1	4·8665	3·60	3·85	3rd Nov.
San Salvador ..	Colones to £1.	9·73	8·30	8·20	24th Nov.
Guatemala ..	Pesos to £1	90·23	198·50	202·02	19th Nov.
Costa Rica ..	Colones to £1.	10·45	16·25	16·00	5th Nov.
Bolivia ..	Pence per Boliviano	19·2	13¾	13¼	14th Oct.

It may be worth while to place on record an official list of exchange rates on Russia (published at the beginning of October), "in conformity with which all citizens will henceforward be able to exchange foreign currencies for Russian Soviet roubles":—

	Roubles.
Pound sterling	231,000
Dollar (U.S.A.)	62,000
Franc (France)	4,300
Mark (Germany)	600
Florin (Holland)	19,600
Lira (Italy)	2,650
Pesetas (Spain)	8,100
Franc (Switzerland)	10,700
Crown (Norway)	8,300
Crown (Sweden)	13,500
Crown (Denmark)	11,000
Mark (Finland)	790
Crowo (Czechoslovakia)	760
Mark (Poland)	15
Drachma (Greece)	3,500
Leu (Rumania)	725
Piastre (Turkey)	41,700
Dinar (Serbia)	1,500
Leva (Bulgaria)	545
Crown (Austria)	55
Yen (Japan)	305,000
Yen (Shanghai)	41,500
Peso (Mexico)	32,700
Rupee (India)	15,700
Rupee (Afgh'nist'n)	750
Kran (Persia)	30,000
Tael (China)	90,000
Mark (Esthonia)	100
Rouble (Latvia)	105
Rouble (Lithuania)	1,160
Mark (Lithuania)	570
The Gold Rouble	100,000

One zolotnik of gold was exchangeable for 105,000 roubles, and one zolotnik of platinum for 315,000 roubles.

War Debts.

Closely allied with the problems of the exchanges and of unemployment—which is even more severe in the United States than in England—is the question of the war advances of Great Britain and the United States to other Allied countries, and of Britain to the States. On December 31st, 1920, the advances made by the United States totalled £2,076,000,000, and by Great Britain £1,803,000,000, making £3,018,000,000 after deduction of the amounts advanced by America to Great Britain. The principal sums owing are: France, £1,166,000,000; Italy, £811,000,000; Russia, £599,000,000; Belgium, £173,000,000. Of the total, £1,786,000,000 is due to the United Kingdom, which owes £865,000,000 to the United States.

"Such a colossal debt hanging round the neck of our Allies," says Mr. Sargant, in an article published during October last, "is enough to cripple them for years had they no other financial burdens to face, but when the serious depreciation in their respective currencies is taken into account the sums they would have to find for the repayment of their debts are perfectly appalling. . . . With the exception of Cuba, the currencies of the debtor countries have depreciated to such an extent that even France and Belgium would have to raise well over twice the amount originally advanced, and Italy and Greece nearly three times the amount. And the smaller countries, which are relatively infinitely poorer, would have to raise from nine to twenty-two times the amounts originally advanced."

The position has received deep attention on the part of economists, politicians, writers and others, and many suggestions have been put forward with a view to meeting the position. More and more the conviction is gaining ground that a complete or at least partial cancellation of war debts is an absolute necessity. The measure should really be an all-round one; but if the United States—losing sight of her own ultimate best interests—would not agree, Great Britain should still act; and in so doing she would be, to use Mr. McKenna's phrase, "selfishly wise." A revision of the financial clauses of the Treaty of Versailles would naturally follow, accompanied by stringent stipulations as to the issue of paper money in Germany.

INTERNATIONAL CREDIT SCHEMES, ETC.

Amongst supplementary measures for the improvement of the economic position various international credit schemes have been put forward, including the Ter Meulen; while at home there has been the Government's credit of £25,000,000. While the Ter Meulen scheme is excellent in its essentials, and the operative parts have been worked out so as to fit in with customary commercial practice, a successful beginning depends upon the establishment of reciprocal relations between the individual customers in solvent productive countries and buyers in more or less distressed states. More especially to remedy this drawback, Sir E. Mountain devised an export credit scheme to be operated through a syndicate controlled by a Committee of the leading bankers and insurance managers in London. Such a syndicate should be supported by the Government and guaranteed against ultimate loss.

The Trade Facilities Bill of the British Government was described as a Bill to authorise the Treasury to guarantee the payment of loans to be applied towards the carrying out of capital undertakings, or in the purchase of articles manufactured in the United Kingdom required for the purposes of any such undertakings, and to amend the Overseas Trade (Credits and Insurance) Act, 1920, and the Overseas Trade (Credits and Insurance) Amendment Act, 1921.

The power of the Treasury to guarantee loans was set out in the following terms:—" If the Treasury are satisfied that the proceeds of any loan proposed to be raised, whether within or without the United Kingdom, by any Government, any public authority, or any corporation or other body of persons, are to be applied towards or in connection with the carrying out of any capital undertaking, or in, or in connection with, the purchase of articles manufactured in the United Kingdom required for the purposes of any such undertaking, and that the application of the loan in the manner proposed is calculated to promote employment in the United Kingdom, the Treasury may, subject to the provisions of this section, guarantee in such manner and form and on such terms and conditions as they think proper the payment of the interest and principal of the loan or of either interest or principal—provided that the aggregate capital amount of the loans, the principal or interest of which is guaranteed under this section, shall not exceed the sum of £25,000,000.

" No guarantee will be given by the Treasury under this section after the expiration of 12 months from the commencement of the Act, and such sums as may from time to time be required by the Treasury for fulfilling any guarantees given under this section shall be charged on and issued out of the Consolidated Fund of the United Kingdom or the growing produce thereof. All sums paid from time to time in or towards the repayment of any sum issued out of the Consolidated Fund under this section shall be paid into the Exchequer."

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Section VIII.

WHEAT.

WHEAT.

WHAT WILL BE THE COURSE OF PRICES OF WHEAT IN 1922?

Wheat will, provided present estimates for Argentina and Australia are borne out, and especially so if India should in May next produce, say, over 40 million quarters, reach considerably lower prices during 1922 than has been the case during 1921.

WHEAT.

It is proposed to take a general survey of the world's production of Wheat during the harvest just ended in the Northern Hemisphere, and to draw inferences from this and other data, such as the requirements of a growing population, the stocks existing at the end of the cereal year just closed, the course of the freight market, and other minor influences bearing on the situation. These factors are of vital importance in forming an opinion of the Wheat situation.

There is one difficulty for which allowance has to be made this year in comparing the production with that of former years, namely, that, owing to alteration of frontiers, the relative increase and decrease of acreage and yields of Wheat in such countries as the Balkans cannot be clearly shown, and it is again the case that no sort of reliable estimate can be given as to Russia's position. Formerly Russia figured during some seasons at the head of the great producing countries of the world, exceeding even the yield of the United States, and heading also the figures of exports, but since 1915 there has been practically no export, and one can only guess what may have been the amount of production.

Stocks Already on Hand.

The cereal year of 1921–22 opened with a moderately large balance of unconsumed stocks on hand from the previous harvest. This stock is totalled from the returns of Wheat for sale into consumption visible in the United States and Canadian elevators, in Argentina and Australia, and includes the quantity known to be afloat to United Kingdom and Continental ports, and the stocks returned by warehouse companies, millers, and merchants in the United Kingdom and elsewhere; it is called the visible supply, and can be taken as approximately correct, and is comparable one year with another. In 1919, at the close of the cereal year, say the end of July, the visible
supply was given as .. .. 18⅓ million quarters.
in 1920 as 18 ,, ,,
and in 1921 as 17 ,, ,,

These figures may appear small as against a world's production of 350 to 400 million quarters per annum, but it will be remembered that of this large production only some 70 or 80 million quarters really come on sale on the international market, and are exchanged by one country with another, the remainder being consumed in the countries where it is grown.

Production.

Starting the new cereal year of 1921–22, then, with a stock of 17 million quarters unconsumed, the world's

production of the year just completing can be put down as 350 millions of quarters, as against a production the year before of 337 million quarters.

THE WORLD'S WHEAT CROP IN PRINCIPAL COUNTRIES.
(In millions of quarters of 480-lbs.)

	1914	1917	1920	1921 (Estimated)
U.S.A.	111	81	98	92·6
Russia	108	?	?	?
India	39	47	46·6	31
France	35	17	28·8	40·4
Argentina	22	27	23	(say) 20
Hungary (pre-war area) ..	21	14	—	—
,, and Jugo Slavia (post-war area)	21	—	12·8	14·2
Italy	21	17	18	23·5
Canada	20	29	33	36·7
Germany	18	13	10·3	12·2
Spain	14	17	17·3	17·9
United Kingdom	8	8	7	8·5
Roumania (pre-war area)	6	—	—	—
,, (post-war area)	—	—	8·8	12·4
Australia	4	15	18	17·3
Egypt	4	3	3·5	4·6
North Africa	4	5	4·1	8·7
Bulgaria	3	4	5	5·3
Czecho-Slovakia	—	—	3·3	5
	*438	†297	†337·5	†350·3

* Including Russia. † Excluding Russia.

The crop credited to India is that harvested in May, 1921. It is too early yet to estimate the crop for May, 1922.

Below is shown the estimated production of Rye, which to a considerable extent substitutes Wheat and Wheat-flour in Germany, France and other Continental countries.

THE WORLD'S RYE CROP IN PRINCIPAL COUNTRIES.
(In millions of quarters of 480-lbs.)

	Average Yield 1915-1917.	Yield. 1920.	Yield 1921. (Estimated).
Russia	90	?	?
Germany	30	23	30·4
Poland	—	9	19
U.S.A.	8	8	7·5
Czecho-Slovakia	—	4	6
France	4	4	5
Spain	3	3	3
	*135	†51	†70·9

* Including Russia. † Excluding Russia.

It will be noticed on reference to the tables that France has more than regained her former productiveness. Germany has improved, while America has fallen back slightly from last year, though still the giant producer, as well as the giant exporter. An interesting item is that Czecho-Slovakia has increased by 50 per cent., Egypt by 30 per cent., and the North African littoral by 100 per cent. in yield, while the vast area in India, unfortunately, shows a set-back of 30 per cent., due to purely accidental circumstances in an exceptional season. Another point worth calling attention to is that though Great Britain herself is very dependent on other growers to make up her requirements of Wheat, the British Empire is self-supporting, and produces sufficient to supply the Mother Country as well as the Colonies and Dependencies without of necessity going outside the Empire to purchase. A table of the relative yields per acre in the various countries is given below.

TABLE OF ACREAGES AND YIELDS OF WHEAT.

	Area.	Yield per bushel.
U.S.A.	56,744,000 acres	13
India	25,722,000 ,,	10
Canada	18,737,000 ,,	16
Argentina (1920/21)	15,014,000 ,,	13
France	12,909,000 ,,	17
Italy	11,787,000 ,,	17
Spain	10,349,000 ,,	14
Australia	9,405,000 ,,	16
Roumania (proper)	5,903,000 ,,	16
North African Provinces (Algeria, Morocco, Tunis)	5,618,000 ,,	15
Germany	3,562,000 ,,	27
Hungary	2,606,000 ,,	17
Bulgaria	2,361,000 ,,	18
United Kingdom (1920)	1,979,000 ,,	25
Czecho-Slovakia	1,538,000 ,,	27

It is pointed out that, speaking broadly, in the countries which require to import and therefore are themselves intensive growers, the average yield is about 30 bushels per English acre, while in exporting, surplus-producing countries, the yield averages about 15 bushels only, though the latter figure is a rising one, the world's average yield in 1898 having been estimated at only 12·7 bushels per acre. The low average to-day of 15 bushels suggests that there are still great possibilities of increased production all the world over, when the problem of fertilisers is settled—a problem which is still engaging the brains of chemists in various countries, busy on the fixation of nitrogen from the atmosphere and other schemes.

Prospects.

These are conservative estimates of production, and care has been taken not to pre-suppose what is uncertain, for instance, as regards India, which will not harvest till next May, but to reckon as her contribution only the reduced quantity actually known to have been yielded in the month of May, 1921, although it is obvious that if she returns to her normal production of 44 millions in the early part of 1921, the resulting exportable surplus will probably bear heavily on an already fully-supplied world. It is true that America has produced less and Argentina may supply less this campaign than last, but the larger home crops reaped in France, Italy and Germany (not to mention our own better yield in the United Kingdom) must mean a correspondingly lessened purchasing power. And in budgetting for next year one must not forget several very important factors, some against, but also some in favour of lower prices than are current even to-day, say, 50/- per quarter.

The former category include :—

(1) The enhanced cost of labour, which will probably preclude any return to the neighbourhood of pre-war currencies, and will tend to steady the presently falling market for some time as it appears that on to-day's basis of cost the growing of Wheat is not a paying proposition.

(2) The probability of larger per capita consumption as a result of cheapened prices, wheat-bread being in the opinion of many far and away the cheapest form of food for the human race.

On the other hand, one must recognise three important checks or "bearish" factors which are making, or will make, themselves felt during 1922, and these are :—

(1) Lessened over-sea freights, some of which are to-day one-third, or less than one-third, of what they were twelve months ago.

(2) The depreciated currencies of Europe tend to enforce lessened buying and lead to increased pressure to find markets on the part of the surplus-producing countries, and

(3) Economy in use practised by purchasing countries in narrow straits for money.

These considerations lead one to the conclusion that, with France and Italy being in 1922 probably very much smaller buyers in the international market than has been the case for some seasons, amounting in the aggregate to a difference of probably 10, if not 12, million quarters, and in addition extra-surpluses in the way of production this season in Roumania, Canada and the North African littoral, only partially counterbalanced by reduced expectations in U.S.A. and Australia, Wheat will, provided present estimates for Argentina and Australia are borne out, and especially so if India should in May next produce, say, over 40 million quarters, reach considerably lower prices during 1922 than has been the case during 1921.

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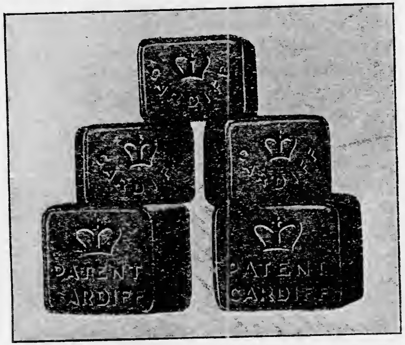

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Section IX.

OIL.

OIL.

WHAT ARE THE PROSPECTS OF THE OIL INDUSTRY IN 1922?

Consumption will once again overtake production. Values will be influenced by developments in Mexico as well as by the industrial situation.

Europe being without adequate reserve stocks of petroleum, a moderate increase in demand will favourably affect prices.

Foreign fields, formerly important factors in the supply of Central Europe, being now of little more than local importance, and various fields under British control having decreased in productiveness, enhanced importance will attach to the position in America and Mexico.

OIL.

A GENERAL SURVEY.

Increased production concurrently with decreasing prices ruled during the past year until the latter factor put the brake on the former. Up to the middle of 1921 the output of both the United States and Mexico reflected the intensive drilling campaign. Then in the one case the drop in values brought about a diminution in activity, and in the other taxation troubles in conjunction with salt water intrusions exerted a marked influence upon the output. Some encouraging strikes have been made in Argentina, but no very definite results have so far attended exploration in South and Central America. As regards the British Empire, the endeavour to find petroleum has virtually proved a failure, drilling having resulted in only one productive well—that at Hardstoft. The final outcome of work in Scotland has to be awaited, but it would look as though the experience there will be much the same as in England. The treatment of the Norfolk shales, which was expected to give returns largely in excess of those near Edinburgh, has yet to justify the claims made. Canada provides the feature of the discovery of what may prove to be an extensive oil deposit in the Mackenzie River district. Nevertheless, owing to the climate, and to transportation difficulties—the nearest railway being 1,200 miles distant—much will have to be done before these deposits can add to the world's available supplies. Egypt has shown a marked falling off in productivity; India has held its position fairly well, although no new discoveries can be recorded. The productivity of Persia continues to be exemplified. In this connection, mention may be made of the completion of the Anglo-Persian Company's great refinery near Swansea; as many as five tankers carrying six and a half million tons of crude have been there at one time. Trinidad has suffered a set-back owing to the difficulty of obtaining drilling material and other causes. The repeated offers of a bonus for the discovery of oil in Australia have at length been rewarded by a find at Kimberley, Western Australia, to which the Government expert appears to attach importance. Considerable attention has been directed to the oil shale deposits of South Africa, more especially in Natal and the Transvaal, while British interests are understood to have taken up a large concession in Angola, South-West Africa. In Europe, the important industries of Galicia and Roumania are now to some extent recovering from the effects of the War, while in Russia the Soviet Government is endeavouring to repair some of the damage done by its methods in the past.

Price Fluctuations.

The price levels reached towards the end of 1920 proved to constitute the apex of the upward movement. Early in January, 1921 the quotation for Pennsylvania crude was cut from $6.10 to $5.75, and other grades quickly followed suit. Reductions of greater or lesser extent were made in the different varieties from time to time down to March, when Pennsylvania stood at no more than $3 per barrel. Towards the end of April a small rally occurred, only to be succeeded by fresh relapses, the leader getting down to $2.25, with other grades correspondingly low.

The following table shows the lowest prices of the principal grades of crude oil for 1921, as against the highest of 1920, also the quotations at the beginning of each of the three preceding years:—

Price Fluctuations in Crude Oil.

	Lowest, 1921.	Highest, 1920.	Jan. 1, 1920.	Jan. 1, 1919.	Jan. 1, 1918.
	$	$	$	$	$
Pennsylvania	2·25	6·10	5·00	4·00	3·75
Corning	1·20	4·25	3·50	3·85	2·80
Cabell	1·11	4·40	3·42	2·77	2·70
Somerset, light	1·00	4·50	3·25	2·60	2·55
Ragland	·60	2·60	1·75	2·32	1·20
Lima	1·58	3·73	2·98	2·38	2·03
Princeton	1·27	3·77	3·02	2·42	2·17
Illinois	1·27	3·77	3·03	2·42	2·12
Mid-Continent	1·00	3·50	2·75	2·25	2·00
Healdton	·50	2·75	2·00	1·45	1·10
Gulf Coast	·80	3·00	1·50	1·80	1·00
Canada	2·63	4·13	3·38	2·78	2·58

Despite the existence of something closely approaching an agreement between the three big producers, the price of petrol tardily followed a similar course, the reduction of 6d. per gallon made in August making the charge for first quality 2/5½, and for third quality 2/3½ per gallon. At the end of August, 1920 the charge to large consumers for third quality stood at the record level of 3/9, comparing with 1/3 immediately before the war. In the United States, the wholesale prices for gasolene (petrol) in thirty leading cities between January and September, 1921 declined an average of 30 per cent. Charges for oil fuel were cut in an even greater degree, supplies having been for some time in excess of demands, with stocks accumulating—in part as a result of the laying up of many steamers, and the re-conversion to coal of a number of vessels.

On the 27th September the price of Pennsylvania crude was raised 25 cents to $2.50 per barrel, North Texas grades a few days later advancing a like amount to $1.50. On the 4th October another jump of 25 cents occurred in the key variety, and on the 20th October the quotation further advanced to $3.50, Mid-Continent crude having in the meantime risen to $1.75, reflecting on the demand for high-class lubricants. On the 2nd November Pennsylvania crude jumped to $4. While much depends of course upon the condition of industry, there seems ground for the belief that the low levels touched in the autumn of 1921 represented the trough of the depression.

The Tanker Position.

Another factor in the situation consists in the great increase which has taken place in transportation facilities. During the War period, immense efforts were made in the building of tankers for the purpose of providing extended facilities as well as replacing sunken vessels. The greatest amount of new tonnage up to this time was launched in 1918, but the launchings of 1921 set up a still higher record at a time when boats were being withdrawn from service for lack of cargo. Below is given a table showing the number of tankers afloat since 1913, their deadweight tonnage and the percentage of increase each year over the preceding twelve months :—

GROWTH OF TANKER TONNAGE.

Year.	No. of Tankers.			D.W. Tonnage.	Per cent. Incr'se.
	American.	Foreign.	Total.		
1913	52	283	335	2,156,978	..
1914	54	290	344	2,325,326	7
1915	92	283	375	2,538,070	9
1916	124	284	408	2,845,414	12
1917	152	301	453	3,331,368	10
1918	189	429	618	4,699,659	41
1919	242	402	644	4,995,122	6
1920	298	376	674	5,215,961	5
1921	403	512	915	7,554,724	43

In like manner, the number of tank cars available in the United States and Canada expanded from 49,900 at the beginning of 1914 to 137,500 on January 1st, 1921. For some time past less than half the cars have been in use.

While the expansion in the use of fuel oil has so far failed to keep pace with the growth in the supply, all the indications go to show that this condition of affairs is merely temporary. The success achieved by the oil-driven "Aquitania" and "Mauritania" will be remembered. The Cunard liner "Berengaria," formerly the Hamburg-Amerika "Imperator," the third largest vessel in the world, is in course of conversion. Large numbers of motor cargo ships of 3,000 to 4,000 tons, and liners of 9,000 to 10,000 tons, are now running or on the stocks. A noteworthy development in this direction is the vessel to be known as "British Industry," of 20,000 tons, which is due to sail from the Thames a couple of years hence as a sort of floating fair. The British Admiralty has decided to build only oil-burning ships in the future. The advantages attaching to the use of oil or oil-fuel instead of coal for ship propulsion have been previously dwelt upon, but it may be pointed out that the conversion of factories is proceeding apace, while—especially in the United States and South America—locomotives are being rapidly adapted. A moderately low level of price will tend to stimulate the use of oil, emphasising its advantages over coal, and giving producers the advantage of a larger turnover.

To illustrate the change which has already taken place in this respect it may be mentioned that whereas in July, 1914 the vessels in Lloyd's Register fitted to burn or converted for burning oil fuel totalled 1,310,209 tons, in July last the corresponding figure was no less than 12,796,635 tons.

GREAT BRITAIN.

When, during the oil shortage of some three years ago, the announcement was made of the willingness of the Government to allocate £1,000,000 for the purpose of testing the country's liquid oil resources, considerable hopes were naturally entertained. In May last it was definitely stated that, with the exception of a well at Hardstoft, the borings had failed to reveal oil in payable quantities, and work in England had been suspended. The well above-named was carried to a depth of 3,130 feet, and by July had produced 233,853 gallons of high-grade crude. The prospect of getting petroleum in Scotland is now confined to the bore at Darcy, near Dalkeith, where a little oil had previously been obtained at a depth of 1,200 feet. While it will be generally agreed that the Government expenditure was justified, should the present drilling operations in Scotland prove abortive there will be little inducement for further expensive research work here. (After the foregoing was put into type, the abandonment of the Lothian boring was announced.)

Britain's Business in Oil.

On the import side, the outstanding feature of our trading in petroleum during the first nine months of 1921 consisted in the jump in the quantity of fuel oil handled, the receipts at 415,141,300 gallons showing an increase of about 68 per cent. over the 1920 figures. Owing, however, to the decline in price, the value rose only 26 per cent. to £10,866,100. A fair expansion occurred under both headings in motor spirit, but lubricating oil dropped from 75,809,700 to 34,165,600 gallons, and from £9,830,200 to £4,830,600. Gas oil scored a moderate increase in quantity with a shrinkage in value. An expansion of about 26 per cent. in the total quantity of gas oil was accompanied by a shrinkage of slightly over 6 per cent. in total value. The figures are given below :—

IMPORTS 1921 and 1920—(NINE MONTHS.)

Variety.	Quantity.		Value.	
	1921.	1920.	1921.	1920.
	Gallons.	Gallons.	£	£
Lamp Oils ..	112,973,274	123,050,232	6,079,958	8,859,716
Motor Spirit ..	195,027,793	151,385,933	19,894,916	16,587,108
Spirit other than Motor ..	12,171	10,972	1,878	2,154
Lubricating Oils	34,165,555	75,809,724	4,830,632	9,830,173
Gas Oil ..	55,708,631	43,290,332	2,053,062	2,703,060
Fuel Oil ..	415,141,311	246,681,404	10,866,098	8,601,944
Other Sorts ..	43,510	59,221	4,935	11,545
Totals ..	813,072,245	640,287,818	43,731,479	46,595,700

As regards the exports, a slump occurred in the quantity of motor spirit sent away, the measure of lubricating oil dropped to less than one-half the 1920 amount, while fuel oil shrunk by about nine-tenths. Naturally, in the conditions which have prevailed, the values experienced a more than corresponding reduction, totalling £885,300, as against £3,725,000, whereas the quantity decreased by only a little over three-quarters.

EXPORTS 1921 AND 1920—(NINE MONTHS.)

Variety.	Quantity.		Value.	
	1921.	1920.	1921.	1920.
	Gallons.	Gallons.	£	£
Lamp Oils ..	554,451	5,779,744	58,792	484,944
Motor Spirit ..	5,744,036	23,209,655	534,796	2,290,026
Spirit other than Motor	4,447	98,025	886	20,515
Lubricating Oils ..	2,010,691	4,537,923	234,859	704,629
Gas Oil	229,901	306,000	8,926	22,320
Fuel Oils	384,907	3,806,408	16,123	202,067
Other Sorts ..	3,173	3,666	887	459
Totals	8,931,606	37,741,421	855,269	3,724,960

BRITISH EMPIRE.

Australia.

Reference has previously been made to the inducements offered by the Commonwealth Government to prospecting for oil. It may be useful to set out the various steps. Early in 1914 a bounty of £5,000 was offered for the first 100,000 gallons of crude petroleum discovered in the Continent. In 1917 the Crude Oil Bonus Bill was passed, giving a bonus descending from 2½d. to 1½d. per gallon of crude produced from mine or kerosene shale, the maximum amount payable being £270,000 spread over the four years ended the 31st August last. Under this Act certain payments have been made—chiefly, if not exclusively, to the Commonwealth Oils group. Again, in January, 1920 the substantially enhanced reward of £10,000 was offered for the discovery of indigenous petroleum oil in commercial quantities, and in the following September the sum was raised to £50,000.

The reward now on offer is subject to the important stipulation that no payment shall be made unless it is proved to the satisfaction of the Minister of the Department concerned that 50,000 gallons have been produced, and that the bore is flowing freely, producing in commercial quantities. In the light of experience this stipulation is undeniably necessary. At several different localities—notably in the neighbourhood of Sydney and Roma—strikes of oil or oil indications have been reported, but so far output in commercial quantities has failed to materialise. Most of the expert reports with reference to the prospects of Australia as an oil producing country have been unfavourable. In this connection the controversy which raged around the report of Dr. Arthur Wade several years ago may be recalled.

One unforeseen and regrettable effect of the £50,000 bonus took the shape of an extraordinary development in wild-catting. Unscrupulous promoters took advantage of the public interest in the bonus to start prospecting and drilling operations which had no other purpose than the fleecing of the inexperienced and unwary. It has been stated on good authority that the Australian Government, realising the unfortunate effect of the bonus as at present offered, has under consideration a new scheme for the encouragement of oil prospecting and development. The advantage of this new scheme is that the payment

of the bulk of the award will be spread over a period of active oil-production and will depend on the extent and value of that production. The discoverer of oil-indications will file his application for the bonus with the Commonwealth Government, which will then obtain from the State Government concerned a prospecting lease. According to this lease, the Commonwealth Government, the State Government, and the Anglo-Persian Oil Company, at their joint expense, one-third each, will have the area of the discovery properly examined by geologists. If their report is sufficiently favourable to justify test-drilling, the discoverer will receive £2,500 reward. The two Governments and the Anglo-Persian Company will then form a company to conduct operations for the production of oil. If these operations are successful, and oil in paying quantities is produced, the original discoverer will receive a penny on each gallon of oil until he has received £25,000, and then a halfpenny per gallon until a further £25,000 has been paid to him, after which his interest in the area expires. This scheme is now being made the basis of negotiations between the Commonwealth and State Governments.

In April, 1921 a discovery of petroleum in the Kimberley district of Western Australia was reported by cable.

A subsequent advice stated that a Government expert was being sent to investigate, but nothing more transpired. Again in October, another find was announced, it being added in this case that seven samples taken by the Government Geologist from a bore down to a depth of 90 feet and one from seepage showed the presence of mineral oil. Leases covering 100,000 square miles in the district have been applied for. Further news will be awaited with much interest.

The British Government's interest in the scheme for oil exploration in Papua has recently been sold to the Commonwealth Government for £25,000, equivalent to the return of the money so far expended.

Delay has occurred in the establishment of the oil refinery as per the agreement between the Commonwealth Government and the Anglo-Persian Company, but it is understood that the difficulties have now been overcome.

Canada.

Detailed information is now available with reference to the oil discovery on the Mackenzie, briefly mentioned last year. Parenthetically it may be stated that the district of Mackenzie extends from latitude 60 degrees north (the northern boundary of Saskatchewan, Alberta, and British Columbia) to the Arctic coast and from longitude 102 degrees west to the eastern boundary of the Yukon territory. The total area is approximately 525,000 square miles. The oilfields of Northern Canada are located in the Mackenzie basin, and are, according to the Geological Survey of Canada, approximately 300,000 square miles in extent.

The following is an account of the happenings by Mr. C. O. Stillman, the president of the Imperial Oil

Company, who despatched an expedition during 1919: "What we have discovered at Fort Norman is as good commercial oil as has ever been produced in Canada, and runs about 40 Baume gravity. This is the character of oil the world is looking for, as it appears to contain large yields of light products, such as gasolene and refined contents. Our Fort Norman rig first struck oil at 80 feet and again at 200 feet, and the third strike at 425 feet. At the last-named depth we got eight barrels a day of an exceedingly high quality. Drilling is going steadily ahead . . . While the showing so far does not prove the existence of an oilfield, it is very encouraging, so far as the work has gone, as it fully justifies the efforts of our geologists and their recommendations, after an immense amount of research work in the Mackenzie field. If subsequent developments carry out the promise there will be a new oilfield in Canada."

It must not, however, be overlooked that the well is 1,500 miles north of Edmonton, and 1,200 miles from the nearest railway. The field is even 900 miles from the nearest calling point by any river boat, and the only access is down the northern rivers, which float boats of four to five foot draft, while several rapids would necessitate the unloading and transporting of cargoes overland and their reloading on barges. To warrant the construction of a pipeline there must be conclusive evidence that the supply is adequate. A line over the distance would cost probably $50,000,000 (approximately £13,330,000). A further difficulty arises over the extreme cold, which makes the rivers navigable only during three or four months of the year.

Meantime, Canada remains dependent on outside sources for its supply of crude oil. The following table shows the principal sources of supply, and also the amount of fuel oil and gasolene imported in the second quarter of 1921, 1920 and 1919 (in American barrels) :—

CANADIAN OIL IMPORTS—2ND QUARTER, 1919, 1920, 1921.

CRUDE OIL.	2nd Quart'r 1921.	2nd Quart'r 1920.	2nd Quart'r 1919.
From United States	1,766,000	1,197,000	1,388,000
From Mexico	913,000	506,000	627,000
From Peru	185,000	113,000	221,000
Total	2,864,000	1,816,000	2,236,000
Fuel Oil, from U.S.	277,000	766,000	569,000
Gasoline, from U.S.	239,000	41,000	31,000

Egypt.

Considerable activity prevailed in the Egyptian oil industry during 1920, extensions on the part of the principal companies engaged being supplemented by preparations by the Government itself to develop fields on the Red Sea coast. Owing, however, to the decline in the productivity of the wells at Hurghada, the output, which for 1918 totalled 277,300 tons, and in 1919 declined to 231,200 tons, for 1920 dropped to 148,900 tons (Egyptian). The output for 1921 should score some recovery.

A Government Blue Book on the finances of the country incidentally stated that during 1920 some 161,000 metric tons of Egyptian crude were received at the Suez refinery, also 107,000 tons from Abadan. Some 121,000 tons of benzine, 30,300 tons of kerosene and 100,000 tons of liquid fuel—all foreign—were stored at the refinery. The kerosene was imported, the remainder re-exported.

In a paper read on October 11th before the Institute of Petroleum Technologists Dr. Hume agreed with the conclusion as to the vegetable origin of Egyptian oil.

Mesopotamia.

Great Britain's mandate over this country has unfortunately led to much friction with the United States in connection with the exploitation of the oil resources. The principal petroliferous areas of Mesopotamia are divided into three belts, as follows :—

(1) The belt between Kirkuk and the Persian Gulf. This belt, extending north-westwards to Kirkuk from the Gulf, is certainly petroliferous in some parts, and may be in others also. One large section (the Shushtar-Ahwaz-Ramuz district) falls outside the boundaries of Mesopotamia. Exploitation work has been done in the Kirkuk-Mendeli-Kasr-i-Shirin area, north of Bagdad, and though production has not been attempted on any scale in this region, some experts are inclined to think that it may prove richer than the Shushtar area (Persian). It lies on the line of the caravan route, between Bagdad and Kermanshah, and is also easily accessible from Mosul. Down to the outbreak of war the wells on the Turkish side of the

frontier had not been exploited by modern methods. The springs were apparently owned by the Turkish Government, and were leased to contractors. The oil was collected in skins from pits and was carried by donkeys to the refineries. There are stills at Kirkuk, Tuza, Khurmatli and Mendeli. The yield has so far been very small; the Kirkuk wells in 1910 were producing only about 130 gallons per day, and those at Tuza Khurmatli about 150. The refined oil was used, according to quality, for illumination, lubrication, or as a specific for mange.

(2) The Middle Tigris belt.—This belt extends up the river from the Fatha gorge in the Jebel Hamrin almost to Mosul. At present oil is worked only at Kaiyara (Guyara), about 50 miles south of Mosul by river, and 40 miles by road. There are oil oozings in the warm springs of Hamman Ali (15 miles south of Mosul), and at El-Hadhr and at the Fethah gorge. It is possible that the whole line of the Hamrin hills is petroliferous. The economic prospects of this area are quite uncertain, and in 1910 the output of a primitive refinery at Kaiyara was insignificant.

(3) The Euphrates belt.—A petroliferous area extends along the river from a few miles south of Hit to some distance above Deirez-Zor. The economic prospects here, too, are quite uncertain. Hitherto the only important exploitation of this area has been at Hit. Before the War there were five bitumen springs in the neighbourhood. In 1909 these were stated to be capable of an output of 2,000 donkey-loads a day, but the actual production was probably considerably less. Owing to lack of transport the bitumen was used locally only, chiefly for pitching boats, bridges, etc. There is now a refinery and petroleum store at Hit.

Newfoundland.

A Bill has been passed confirming the agreement between the Newfoundland Government and the D'Arcy Exploration Company, a subsidiary company of the Anglo-Persian Oil Company. The meaning of the agreement is this :—The company shall have two years in which to prospect and survey unoccupied Crown lands for oil, and as it prospects it is to furnish the Government from time to time with reports of what it does. If the company discovers that oil is likely to be found in any particular area, it will form what is called a test area, the total test area not to exceed 3,600 square miles, which, it is claimed, is only a reasonable oilfield. In order to hold a test area the company must sink a well in every twelve square miles within six months after the company has taken it up. The consideration in the agreement, in the event of the successful working of oil, is that the company will pay to the Government 12½ per cent. of the value of all oil obtained at the casing head. Operations must be continuously carried on.

The oil-bearing possibilities of Newfoundland are considerable, and some drilling in the past has secured fair petroleum indications, though there is no commercial production. The most promising area is at Parson's

Pond, on the west coast, where several tests have been drilled. Port-au-Port is another promising locality. In addition, there are reported to be large shale deposits in the vicinity of Deer Lake. Some preliminary work was done last year in the oil shale area near Deer Lake, and it is planned to undertake extensive develpoment there. Preliminary work has also been done at Port-au-Port, which will likely be followed up by commercial drilling.

New Zealand.

The petroleum resources of this island have attracted attention from time to time during recent years, but up to the present petroleum has not been found in payable quantities. In view of the nature of the indications, it is, however, hoped that sooner or later New Zealand will be scheduled as one of the oil-producing countries of the world. The Government has now under consideration a proposal for the development of the oil resources with the object of definitely proving whether they are of commercial value. Oil-prospecting operations throughout the Dominion have received very liberal financial assistance from the Government in the form of bonuses, subsidies and loans of money. During 1920, £4,450 was paid in the shape of subsidies to oil-boring companies. In previous years the Taranaki Company gained a bonus of £7,500 for the production of the first 1,000,000 gallons of marketable crude oil, and also a £1,250 bonus for the first 250,000 gallons of refined oil.

South Africa.

A reference to the discovery of oil in the Carnarvon district by the Minister of Mines, combined with the extending activities of the Royal Dutch-Shell group in the country, has greatly stimulated public interest in the development of the oil industry in the Union. The Royal Dutch-Shell combine has forestalled possible competition from powerful rivals by acquiring interests in bituminous shale areas in various parts of the country, particularly in the Wakkerstroom and Ermelo regions of the Transvaal and the Impendhle Valley, Underberg district of Natal. There is evidence of the existence of a very extensive oil shale field in this portion of the Transvaal. Some observers contend that bituminous shales of payable content extend over a great portion of the Eastern Transvaal and that their value is to be reckoned in many millions of pounds. In this connection much importance attaches to the successful commercial treatment of shale. It is claimed that the exclusion of sulphur in objectionable quantities from the refined products is no longer costly or difficult.

The Anglo-Persian Company is erecting large tankage accommodation at Durban.

Angola (South West Africa).

While there are many and varied mineral resources in the hill districts of Angola, the chief interest at the present time centres in the accessible oil area near the coast, where river, as well as railway, communications are available for transport to Lobito Bay, the port of shipment. The existence of oil in Angola is no new discovery, for Portuguese official reports as far back as 1844 referred to extensive deposits of petroleum, almost all of which were stated to be situated at points near the coast or near navigable rivers. But prospecting was slow, perfunctory and ill-directed, with the result that operations were carried on much too far to the north. There was a revival of prospecting by American, Belgian, and other capitalists prior to the War, but little was done in the way of systematic survey till the American Petroleum Company struck a very promising area just north of the Benguella Railway and started active exploitation. Till recently it had seemed that British enterprise was either indifferent or uninformed, but it is reported from London that an important concession, favourably reported on, has been acquired by British interests. It comprises an area of 107,000 square miles from the coast inland, with a coastal extension of 250 miles from the Benguella Railway southward to Port Alexandria.

Tasmania.

Private efforts are still being made to demonstrate that oil and numerous valuable by-products can be obtained profitably from the oil-bearing shales at Latrobe, North-Western Tasmania, where there are estimated to be many millions of tons of easily accessible deposits.

Trinidad.

In the course of his report for 1920 the Acting Inspector of Mines referred to the great difficulty experienced in obtaining delivery of drilling plant and machinery. The position in this respect has since improved. The following table shows the number of feet drilled and the quantity of oil produced during 1920 in contrast with the results for 1919 :—

—	Year ended 31st Dec., 1920.		Year ended 31st Dec., 1919.	
	Feet drilled.	Oil won.	Feet drilled.	Oil won.
		Imp. gall.		Imp. gall.
Crown lands	53,404	61,532,046	49,122	55,534,295
Private lands ..	23,972	11,373,901	18,937	10,902,337
Total	77,376	72,905,947	63,059	64,436,632

At the close of 1920 22 companies were engaged in the winning of oil, as against 13 at the end of 1919. The number of new wells drilled was 67, an increase of 14. Large shipments of oil fuel were made to the Admiralty and constituted the largest part of the oil exported from the Colony, most of the lighter products being exported to private firms. If the wells now being drilled in new districts are successful in obtaining oil in commercial quantities, the production of oil from the Colony should be very largely increased in the near future. The following table of the annual production of oil from 1905 gives some indication of the course of events :—

	Imp. Gallons.
1905-1909-10	368,934
1910-11	4,378,942
1911-12	9,985,748
1912-13	17,626,563
1913-14	22,523,060
1914-15	36,753,931
9 months ending Dec., 1915	23,489,362
1916	32,475,695
1917	56,080,914
1918	72,872,398
1919	64,436,632
1920	72,905,947

The exports of petroleum and bituminous products during the years 1919 and 1920 were as under :—

	1920.	1919.
Petroleum (gallons)	32,527,000	49,219,000
Asbestos (tons)	113,532	66,396
Manjak (tons)	165	178

The reduction in petroleum arises partly from the increased local consumption, and partly from the fact that more of the oil is now exported in a refined state.

Prospects and Possibilities in the British Empire.

In the course of a paper read on the 17th October before the London Chamber of Commerce, Mr. A. Beeby Thompson said : " Outside England, the British Empire virtually controls in dependencies and mandates real and potential oilfields in Burma, India, Trinidad, Egypt, Borneo, Canada, Barbados, Mesopotamia, Palestine, New Guinea, New Zealand and Somaliland, with an approximate annual yield of 14,600,000 barrels.

" In none of the before-named countries has much active prospecting been undertaken, except in Burma, Canada and Trinidad, where, nevertheless, there still remain many districts receiving or awaiting attention. Eastern Bengal and Assam are likely to evolve surprises to courageous explorers, and the North-West Provinces of India furnish attractive possibilities. Many are the manifestations of oil along the foothills of the Himalayas fringing Kashmir, Afghanistan and Baluchistan that will not long remain neglected when peaceful conditions return. Egypt, Sinai and Palestine are at length receiving the attention they deserve. The prospects in Egyptian territory are considerable, although the geology is obscure, but Palestine presents possibilities of no mean order. Between Jerusalem and Jericho and around the Dead Sea there are rocks sweating oil derived from some deeper-seated origin. Our West Indian Islands are acquiring a new importance with the oil developments in Trinidad, and Barbados is capable of possibilities not yet generally appreciated. Of all the areas we control, Mesopotamia possibly offers the greatest opportunities."

EUROPE AND MISCELLANEOUS.

Austria.

In August last the Austrian Mineral Oil Office issued a circular stating that, in view of the more favourable import of petroleum, the Office has now large stocks in hand, and it has consequently been able to relax the existing severe regulations regarding the internal distribution of petroleum, and in future customers will be able to obtain, without formality, quantities over and above those to which their ration cards entitle them.

The oil fields of Galicia, which belonged to the former empire, are now part of Poland, and Austria must import all the liquid fuel it requires from abroad. The consumption in peace time is estimated at about 200,000 tons, including 48,000 tons of benzine. Owing to transport difficulties and political and economic troubles, it has been possible to obtain only a small part of the country's requirements from Galicia and Roumania, the nearest sources of supply; some has been imported from overseas, though not nearly enough to make up for the deficiency. It has therefore been impossible to make up for the shortage of coal by an increased import of oil. There are three refineries in the country capable of dealing with about 8,000 tons monthly, but they have only small supplies of crude. Some works are being constructed in the Tyrol for the extraction of oil from shale, and it was hoped that these would begin production in the summer of 1921.

Dutch East Indies.

The chief feature in connection with the production of oil in the Netherlands has consisted in the imposition of exceedingly heavy export duties. This led to the restriction of output, and to protests from the Royal Dutch Company, which urged that any further taxation necessary should be imposed upon profits. The Dutch Government lent a ready ear, and a reduction in the duties was quickly announced.

The following statistics of production in the Netherlands have been compiled from the reports of the Royal Dutch Company :—

	1918.	1919.	1920.
	Tons.	Tons.	Tons.
South Sumatra ..	283,651	301,274	302,011
North Sumatra ..	194,417	176,703	194,340
Borneo	999,174	1,372,006	1,455,128
Java	225,859	358,810	311,677
Ceram	3,554	7,120	20,980
Total	1,706,675	2,092,917	2,284,136

In Sarawak, the production increased from 84,340E tons to 144,410E tons. The general increase in output reflects the extension of the pipe-line and refining capacity.

France.

The proposal for the construction of a pipe-line from Havre to Paris was revived in the autumn of 1920. It is stated that the cost of construction, originally estimated at 100,000,000 francs, will probably be in the neighbourhood of 85,000,000, owing to the fall in the price of tubing and tanks.

According to the newspapers prospecting work in the Haute Loire Department has revealed the presence of vast oil deposits, and arrangements are being made for their development.

A decree, published in September, annulled the prohibition on the export and re-export of petroleum and other mineral oils.

Germany.

During 1920 the petroleum question in Germany assumed the same importance as in the rest of the world. The consumption of lamp oil in Germany is between 110,000 and 120,000 tons yearly, mainly imported through the intermediary of an American firm. The price rose steadily from three marks in January to seven in December, 1920. The refineries treated 30,000 tons of crude oil, chiefly of Alsacian, Polish and American origin, but the available quantities were insufficient to keep the works going. In 1921 this state of affairs became accentuated by the closure of some of the refineries. The position in regard to motor spirit was not ameliorated as a result of the peace arrangement under which Germany agreed to deliver to France 35,000 tons of motor spirit for the succeeding three years.

In 1919 Germany concluded an agreement with Poland for the supply of petroleum objects, but only a portion of the deliveries stipulated were made. It is reported that the petroleum trade of Germany with the United States has become quite normal; indeed the large quantities which were sent to Germany in pre-war days have been exceeded. In 1920 America's oil exports to Germany were valued at $12,000,000, as compared with quantities in pre-war days representing about one-quarter of this sum.

Italy.

The production of crude oil in Italy during 1920 amounted to 5,475 tons, as compared with 4,851 tons in 1919, and 4,907 tons in 1918. The oil is produced almost wholly in the province of Emilia, on the Po plain, where the wells of Velleia, Montechino and Rallio, Valezza, Ozzano and Miano de Medesano are situated. The well at Ripi, brought in on State property with an initial production of 8,000 litres per day, has maintained this output up to the present.

Japan.

According to the returns of the Financial Department of Japan, there were imported into the country during 1920 47,575,946 gallons of petroleum products, the quantity being a record. During the previous twelve months the total was 44,295,670 gallons, the details for the two years being as under :—

	1920. (In gallons).	1919. (In gallons).
Crude Oil	4,157,496	2,511,426
Motor Spirit	6,105,973	2,663,293
Illuminating Oil :—		
In cans	8,431,072	8,630,054
Other receptacles	25,480,317	28,728,998
Mineral colza	551,182	210,343
Other Products	2,849,906	1,551,556
Total	47,575,946	44,295,670

Poland.

In pre-war days German and Austrian capital controlled the Galician petroleum industry, with only a small percentage of British interest in the fields. Now France holds a preponderating interest, and conditions have in other respects undergone a radical change. The Polish oil industry is for the most part in the hands of the Government, the control being exercised through the State Oil Bureau, which was recently transferred to the Ministry of Industry and Commerce. The Government possesses the principal refineries, the largest of which is that at Drohobycz, the railways and the pipe-lines, and before a company is permitted to sell oil, its contract for sale must be approved by the Government officials, under the provision of old Austrian laws which have not yet been abrogated, though they have never been clearly defined.

Up to the outbreak of the war no country, with the exception of the United States, Russia and Mexico, had produced as much rock-oil as Galicia, although from 1910 production began to diminish. The cause of this was partly the exhaustion of some rich sources and partly the reduction in boring operations occasioned by abnormal conditions of production—want of reservoirs, pipe-lines and railway cisterns, and also insufficient investigation of the oil zones.

The following table gives the output for the last twenty-one years :—

Galician Oil Production.

Year.	Output (in tons).	Value (in crowns).	Year.	Output (in tons).	Value (in crowns).
1900	347,213	21,113,577	1911	1,487,842	46,994,393
1901	404,662	23,010,589	1912	1,144,133	57,234,546
1902	520,847	14,676,651	1913	1,113,668	85,741,538
1903	672,508	17,101,312	1914	655,614	46,149,325
1904	823,943	24,405,822	1915	676,942	72,488,976
1905	794,391	19,587,433	1916	927,440	186,286,057
1906	737,104	19,843,685	1917	901,910	271,575,047
1907	1,125,806	24,938,473	1918	822,940	—
1908	1,718,030	20,570,784	1919	831,703	—
1909	2,086,340	32,221,494	1920	764,818	—
1910	1,677,976	44,068,490			

The decline shown in 1920 continued during the early part of 1921, despite an increased amount of sinking.

Galicia is also blessed with a great wealth of oil gas. Although the production of this gas is not managed on sufficiently economic lines, owing to the want of pipe-lines, of which there were scarcely 1,270,000 metres in 1909, the Tustanowice and Boryslaw district alone could, it is claimed, supply 525,000,000 m^3 of gas, equal to 50,000 wagons of rock-oil and worth £1,000,000. Gas oil is especially abundant in the Krosno district.

Besides crude and gas oil, Galicia has great deposits of natural petroleum wax or ozokerite. The output from 1900 to 1913 was as follows :—

	TONS.		TONS.
1900 ..	2,004	1907 ..	2,508
1901 ..	2,707	1908 ..	2,593
1902 ..	2,655	1909 ..	2,115
1903 ..	2,849	1910 ..	2,171
1904 ..	3,086	1911 ..	1,940
1905 ..	2,957	1912 ..	1,683
1906 ..	2,698	1913 ..	1,353

Poland produces two types of crude oil, one of which is produced at Boryslaw and Tustanowice (standard type), the average analysis of which gives :—

About 35 per cent. kerosene.
,, 21 per cent. lubricating oils.
,, 10 per cent. motor spirit.
,, 10 per cent. gas oil.
,, 6 per cent. paraffin wax.
,, 6 per cent. residues (asphalt, coke, tar, etc.).

Besides the standard type mentioned, a special type is obtained which possesses no paraffin wax, but, on the other hand, contains a greater percentage of motor spirit. The average analysis of this special type is as follows :—

About 63 per cent. motor spirit.
,, 15 per cent. lubricating oils.
,, 10 per cent. gas oil.
,, 20 per cent. residues.

The loss in the process of refining amounts to about 12 per cent. of the standard type, and about 10 per cent. for special type. Of the total oil production in Galicia about 80 per cent. is of the standard type, and the rest (20 per cent.) of the special type.

The refineries turned their attention in the first place to petroleum as the most abundant product of Galician rock-oil, then to lubricating and other oils, and finally to motor spirit and refined paraffin. All the refineries in the former Austro-Hungarian Empire together worked up the undermentioned quantities during the years quoted. The percentages of the Galician contributions are shown separately.

Crude Oil.

	Tons.	Galician Refineries.
1905	662,730	33·7 %
1906	831,250	25·8 %
1907	977,160	28·8 %
1908	1,266,560	30·56%
1909	1,628,360	35·08%
1910	1,438,960	49·69%
1911	1,565,580	46·80%
1912	1,754,770	51·00%
1913	1,768,850	—
1920	668,650	(Galician only).

The Austrian refineries took the first place until the construction of a Government distillery at Drohobycz turned the balance in favour of Galicia.

Roumania.

According to advices from Bucharest the revised figures for 1920 showed a total output of 1,034,000 tons, of which 1,007,802 tons were produced by the operating companies, the remainder being produced by private owners. Production was considerably affected by the lack of proper transport facilities and an inadequate supply of electricity.

Since 1913, the production has been as follows :—

Roumanian Oil Production.

	tons.		tons.
1913	1,885,619	1917	527,491
1914	1,783,947	1918	1,214,219
1915	1,673,145	1919	920,410
1916	1,244,093	1920	1,034,000

The following table shows the production by districts for the past two years :—

DISTRICT.	1919. Tons.	1920. Tons.	Increase or Decrease.
Prahova	690,162	805,797	+ 115,635
Dambovita	135,769	124,931	— 10,838
Buzau	48,694	57,651	+ 8,957
Bacau	45,812	45,744	— 68
Total	920,437	1,034,123	+ 112,686

The present general production remains stationary at about 3,200 tons a day. The lack of electric current is still the principal circumstance retarding the output, but steps are being taken to overcome this difficulty.

The total exports of petroleum during the year 1920 amounted to 246,000 tons, about ten times the export during 1919, but still greatly behind the average for the three years before the war.

The following table shows the production of oil in Roumania for the first six months of 1921 in comparison with the previous year :—

MONTHLY PRODUCTION OF OIL IN ROUMANIA.

Month.		1920. Tons.		1921. Tons.
January	..	70,028	..	97,883
February..	..	66,354	..	82,724
March ..	..	79,149	..	93,165
April ..	..	90,735	..	97,601
May ..	..	78,431	..	99,368
June ..	..	79,757	..	78,752
TOTALS	..	464,459	..	550,463

After prolonged negotiations, the Government consented to a revision of the export taxes. Appended is a schedule of the new rates :—

Light benzine ..	6,000	plus	1,000	lei com. per wagon.
Heavy benzine	5,200	,,	800	,, ,, ,, ,,
Kerosene ..	2,000	,,	300	,, ,, ,, ,,
Gasoline and light oils ..	2,800	,,	500	,, ,, ,, ,,
Heavy oils ..	7,000	,,	1,000	,, ,, ,, ,,

According to the latest available information the general situation is beginning to show signs of improvement, thanks to an increase in the supply of electricity.

New wells are being brought in by the principal companies, which are expected to contribute to the increased production. The price of unrefined petrol has remained stationary owing to the absence of business, due largely to the fact that the refineries are full of old stocks, and as a consequence it is quite impossible to handle any new.

For the first half of 1921 the exports of petroleum and petroleum products totalled 107,472 metric tons, as against 94,322 metric tons in the corresponding period of 1920. The figures for the various products are given below :—

ROUMANIAN EXPORTS.

	First half of	
	1921. Tons.	1920. Tons.
Crude oil	11,462	3,500
Petrol	34,240	24,594
Lamp oil (refined and distilled)	39,563	49,570
Gas oil	10,199	12,825
Heavy oils	12,008	3,833
Total	107,472	94,322

The present daily production of Roumanian oil is approximately 3,200 tons, and with the improvement in the supply of electric current both production and exports are expected to show a considerable improvement in the near future.

Russia.

According to a report on the petroleum industry of Soviet Russia, translated by the United States authorities, the stocks at the beginning of October, 1917, amounted to 3,226,000 tons, the bulk being stored in the Volga River warehouses, the main distributing centres for the interior markets. At the end of that year the Grozny region was lost by the Bolsheviks, and in August, 1918 the Baku field.

As a result of these events, in conjunction with shortage of transport and other adverse factors, the distribution of petroleum was greatly curtailed, individual consumers receiving none at all. The recapture of Emba Grozony, and subsequently Baku, provided supplies substantial, but still insufficient for the requirements of the country

After April, 1920, when the Bolsheviks took control of the Baku oilfields, there was a steady falling off in the production, and in the number of flowing wells, until by the beginning of 1921 drilling was almost at a standstill. These features are largely explained by the shrinkage in the number of workmen, due largely to the acute shortage of foodstuffs, clothing and materials. The output totalled 2,537,100 tons. On January 1st, 1921 the quantity of petroleum products stored at Baku amounted to 2,233,500 tons, or not much more than half the quantity available on August 1st, 1920.

In the Grozny region, however, thanks to a more than proportionate increase in the number of workmen, some recovery occurred in the output, and the quantity shipped was larger still, old stocks being drawn upon. It may be noted that, whereas in both 1916 and 1917, half the oil transported was piped to Petrovsk, and thence taken by sea, in 1920 the whole supply went by rail.

In the Emba region, an acute shortage of food, equipment and housing facilities prevailed, production was hindered by the lack of storage facilities, also labour and materials, and no shipments were made during 1920.

The production during the past four years for the Grozny region, and the total for the whole of Russia was as set out below :—

	GROZNY. Tons.	RUSSIA. Tons.
1917	1,577,670	8,477,420
1918	406,730	3,651,610
1919	608,680	4,267,740
1920	772,220	3,418,270

For 1913, the Grozny output totalled 1,188,000 tons, with 278 producing wells, as against 351 wells in 1920.

The production of crude oil on the Baku oilfields in 1920 was approximately as follows :—

	Poods.
January, February, March	57,000,000
April	18,000,000
May and June	29,000,000
July	14,000,000
August	13,000,000
September	10,800,000
October	11,700,000
November	11,500,000
December	11,000,000
Total (gross)	176,000,000

On 18th April, 1920, the day of the Bolshevik occupation of Baku, the stocks of oil and oil products were about 300,000,000 poods. During the months of navigation (28th April to the beginning of November) about 65,000,000 poods net of crude oil were produced. The stocks of oil at the close of navigation were about 210,000,000 poods.

Of all the oil products exported to Central Russia in 1920 the greatest attention was paid to crude oil and residuals—which serve as fuel.

Spain.

According to a report to the United States Bureau of Foreign and Domestic Commerce from the Commercial Attaché at Madrid, a geological survey of Spain has disclosed numerous indications of the existence of petroleum in various sections of that country. In the north-west the only evidences of petroleum are those shown by the soundings made in Caldones, near Gijon. A gaseous deposit of saturated hydrocarbon of paraffin was found, which, on escaping to the air, became inflamed and burnt up the drilling apparatus. As to the northern region, in the Province of Santader, in the Cabexon de la Sal, a perforation was made 527 metres in depth, and at that depth a bituminous asphalt or heavy oil was encountered. At various points south of Cabezon de la Sal, in the chalky plains of Puerto del Escudo, sandstone impregnated with mineral oil has been found. In the Province of Burgos, near the town of Huidobro, interesting indications of petroleum have been discovered. Petroleum is to be found in San Juan de las Abadesas, Pons de Molins, and San Lorenzo de Muga, and in other localities from which calcium and other materials for cement are extracted. In the central region there are also indications in Siguenza and Molina de Areagon. In the southern region, the indications of petroleum are very abundant, especially at Villa Martin and Arcos de la Frontera, near Conil (Cadiz), and in Utera and Moron de la Frontera (Sevilla), almost all in the triassic region. Mineral oil with asphalt is also to be found in Chorro (Malaga). There is also bituminous slate, whether with or without petroleum it is not known, in the Cueva de la Paz, de Bayarque (Almeria).

SOUTH AND CENTRAL AMERICA.

Argentina.

Prospecting for petroleum has been very active in the Republic of Argentina. The Government borings at Plaza Huincul, Neuquen Territory, made a find of petroleum at a depth of 600 metres of good quality, producing on distillation 25 per cent. of naphtha. Discoveries have also been made in the department of San Pedro, Province of Jujuy, and in the neighbouring district of Oran, Province of Salta. The Minister of Public Works authorised the State Railways to make borings in these districts. The mineral would appear to be well distributed over a large tract of the Republic, its presence having been proved at Neuquen, Santa Cruz, south-west of Mendoza, Salta, Jujuy and Rio Negro, not to mention the well-known Comodore Rivadavia district. At the latter the Government's No. 218 well was brought in during March, 1921, with an initial production of 15,000 barrels per day; several

gushers have been struck, also an " extraordinarily good " gas well just recently.

With full and proper development there should be no difficulty in producing more than sufficient fuel for local needs, but as yet this is not the case. The railways are gradually increasing the use of oil in their engines, but to make up for the deficiency large quantities of oil are imported from Tampico, Mexico. Petroleum is looked upon as the fuel for the future, and in this respect Argentina is very favourably placed.

Colombia.

For a long time past the Latin-American section of the American Board of Trade has been studying the position of the petroleum industry in Colombia. According to eminent geologists the country is rich in petroliferous deposits, and its situation in relation to the United States gives it an advantage over Mexico.

Three prospective oil areas have been defined, the Caribbean coastal region, Rio Colorado and the Venezuelan boundary region. In the first-named many difficulties are encountered because of the softness of the sand and mud formations. Although oil is found at shallow depths —from 400 to 1,000 feet—eight wells have been drilled without a completion of sufficient size to be commercial. The Colorado region is the only one in which wells of any productivity have been completed. Here the oil is of good quality, density about 35° Beaume, containing a small quantity of bitumen and yielding a breakage of 40 per cent. benzine. The Venezuelan boundary region, sometimes called Santander del Norte, embraces the Barco concession of 1,500,000 acres. Numerous companies, American and British, have either taken over concessions or are investigationg the prospects for oil. Little has been accomplished in the way of drilling because the various properties are inaccessible on account of forest growth. Much money must first be expended in clearing the jungle and building wagon roads before transportation of materials is possible.

The Colombian oil laws, which were framed to give preference to native undertakings, provide for a high tax to be paid by foreign companies. Loud complaints have been made by the latter, and it is thought some modification in the enactments may result.

Peru.

In a communication to the Press, the Consul-General in London for Peru called attention to the unexplored oil-fields of Peru. He stated that with the exception of the London Pacific Petroleum Company's output, which rose from 40,000 tons in 1904 to 350,000 tons in 1920, the vast oil resources of Peru stand virtually untapped. Eminent geologists who have explored the country under Government auspices have reported great oil deposits

in the Montana or forest region on the eastern slopes of the Andes. The coast from Port Tumbez to Ilo, some 1,500 leagues, is asserted to be rich in oil, as are also the hills at 8,000 to 15,000 feet above sea level. Oil has also been found in the departments of Abancay and Ayacucho, reached from Cuzco railhead, which is 500 miles from the coast.

Peruvian oil, adds the Consul-General, is not a recent discovery, and it will surprise most people to learn that this oil was in common use for various purposes, such as pottery painting and fire raising, in the times of the ancient Incas. Only the absence of railways prevents the due exploitation of these rich oilfields. In a country equal in size to a tenth part of South America there are only some 3,000 kilometres of line. But the existence of these oil resources should call the railways into being. Experience shows that the small company fails—the great one succeeds. Given this condition, and the vital one also of expert management, the oilfields of Peru, lying dormant for centuries, are awaiting profitable exploitation.

Uruguay.

The engineers who are conducting a series of explorations with the hope of discovering petroleum in Uruguay have reported promising indications in the northern and north-eastern sections, where the bituminous strata of southern Brazil's oilfields cross the border into Uruguay. A boring made to the depth of 1,640 feet, near the city of Melo, while it did not result in striking oil, proved that oil was present in small quantity in the strata through which the drill passed.

Venezuela.

According to the conclusions of experts the oil resources of Venezuela are of very appreciable value and extent, and destined in the near future to become one of the principal productive areas. The Caribbean coast, from the mouth of the Magdalena to the great lagoon of Maracaibo, is obviously petroliferous, and within Colombian territory much of it is now being exploited on a more or less tentative scale. Passing over the Venezuelan border into the region of the above-mentioned lake, there are found large reserves of bitumen and asphalt, which have been more thoroughly exploited commercially, and in this process have produced very strong indications of subterranean deposits of liquid petroleum well deserving investigation.

From about 20,000 tons in 1914 the output has increased to over 50,000 tons at the present time. Nearly all this has been obtained from the Maracaibo section, and most of it has been obtained by the Caribbean Petroleum Company, which is a member of the Royal Dutch-Shell group. The Venezuelan Oil Concessions, Ltd., a British concern, made an arrangement with this group in 1915 to take over the exploitation of its territories. This was delayed owing to the war and left in abeyance. The scheme has now been revived and put into active operation.

MEXICO.

In the annals of the Mexican petroleum industry 1920-21 will figure as a period of sensation. It witnessed a fresh record in production, and a scare caused by the intrusion of salt water on an unprecedented scale ; also a somewhat acute conflict between the authorities and the principal interests engaged in the exploitation of the oilfields.

The following record shows at a glance the remarkable manner in which Mexico has increased its output, in comparison with the rest of the world :—

MEXICAN OIL PRODUCTION.

	World's Total. Barrels.	Mex. Prod. Barrels.
1910	327,937,000	3,634,000
1911	344,174,000	12,553,000
1912	352,447,000	16,558,000
1913	384,668,000	25,904,000
1914	399,667,000	21,188,000
1915	426,371,000	32,911,000
1916	459,433,000	39,817,000
1917	505,362,000	55,293,000
1918	514,729,000	63,828,000
1919	554,000,000	92,402,000
1920	688,474,000	163,040,000

In the South fields, the Los Naranjos district contributed the major portion of the oil produced in that light-gravity area during 1920. The remainder of the South fields' production came from the Tepetate Chinampa (Upper Chinampa), Cerro Azul, Alamo and Potrero-Alazan, in the order named.

The shipments of petroleum in tankers during 1920 totalled 153,332,000 barrels, an increase of 72,630,000 barrels over the 1919 movement. Reduced to a table, the oils despatched in vessel shipments during 1919 and 1920 were as follows (in barrels of 42 gallons) :—

MEXICAN OIL EXPORTS.

	1919 Barrels.	1920 Barrels.
Crude	60,434,000	105,988,000
Topped crude (prepared fuel)	15,393,000	37,449,000
Distillates	2,984,000	5,000,000
Bunkers (to balance) ..	1,801,000	4,895,000
Totals	80,702,000	156,432,000

The total volume of oil held in steel storage at the end of 1920 amounted to 11,590,000 barrels, divided as follows :—Crudes, 8,828,000 ; topped crudes, 2,762,000.

In the first six months of 1921, shipments totalled 102,600,000 barrels, comparing with 79,900,000 barrels in the corresponding period of 1920, the increase being partly attributable to despatches in anticipation of the taxation due to come into force on the 1st of July. In August the monthly shipments fell to five-and-a-half million barrels, and for the nine months the total was no more than 129,018,300 barrels.

The export tax having been modified, little purpose would be served by a discussion of its original provisions. It may, however, be useful to set out the facts with respect to the imports levied by the Mexican Government upon the production of oil. The tax was brought into existence by a decree issued by Carranza on April 13th, 1917, and in force until July the 1st, 1921, when it was replaced by a new special tax created by a decree of President Obregon, bearing the date of 24th May.

On the 7th June President Obregon issued a decree establishing an export tax. This new tax, which is independent of all the others, and is the first export tax on oil (called as such) that has existed in recent years, came into effect on the 1st July, together with the special tax of the 24th May.

In addition to these two taxes there is another one known as "infalsificable tax." It was created by Carranza in an effort to redeem the paper money that was then in circulation, and required that the oil companies in paying their taxes to the Government, which taxes were to be paid in gold, should also pay an equal amount in paper money. The paper money had depreciated so much in value that it could be obtained at ten centavos for one peso. In this way the Government retired a large quantity of paper money from circulation. The oil companies soon found it hard to obtain the paper money, as some of the so-called "coyotes" monopolized what was left and demanded a high price for it. The Government then made an agreement with the oil companies whereby they were to pay this "infalsificable tax" in gold instead of paper money. The amount to be paid in gold was fixed at 10 per cent. of the amount of taxes paid to the Government. After Carranza was deposed, the Governments that followed continued to levy this tax, and it is still in force.

The combined taxes being excessively onerous—they amounted in some cases to more than the price of the oil at the Mexican ports, after allowing for transportation—the leading oil interests not only made very energetic representations, but reduced their shipments, and in at any rate one case the threat was made of withdrawal from the export business. As a reprisal, President Obregon, under date 4th July, issued a decree ordering the oil companies which had ceased or reduced operations to pay indemnification to employees thus thrown out of work, and an embargo was placed on oil in storage. Early in September, an agreement was reached between the Mexican Minister of Finance and representatives of the leading American oil interests. Taxation was reduced by nearly 50 per cent. on the average, and the embargo was raised.

The intrusion of salt water into the Mexican oilfields is, of course, no new phenomenon. The well-known fields of Juan Casiano, Potrero del Lano, Tepetate and Chinampa were in successive periods put out of action by saline intrusions. But this feature of the country was brought into prominence by an expert report which appeared in a United States technical journal. About the middle of 1921 a pessimistic report by Senator Phelan, acting for the United States Shipping Board, followed. The conclusions drawn, if sensational, appear to have received a large measure of confirmation in subsequent events. Between the 20th and 29th August no less than thirteen wells in the Amatlan district were affected. Amatlan had been looked upon as a source of large supply for a number of months to come and, by many, as a separate and distinct pool from Los Naranjos, which is the next pool north. The inference now is that the two fields

are connected, and the early appearance of water indicates that part of Naranjos production was drainage from Amatlan. One result of the Amatlan situation will be the drawing of more oil from the fields to the South. There are only two large producing districts south of Amatlan, if the small well district of Northern Zacamixtle is excluded. These are Toteco and Cerro Azul. In Zacamixtle proper scarcely enough work has yet been done to permit of conclusions being drawn, but an intensive drilling campaign is in progress in this and neighbouring localities. According to an official Mexican report signs of salt water have been observed in some of the Zacamixtle wells.

While it is possible that in the recent past the Mexican oil industry has suffered in an exceptional degree from water trouble—to say nothing of more or less accidental conflagrations—the events compel an amended view to be taken of the prospects Hitherto the most striking feature has consisted in the enormous productivity of the wells as compared with those in the United States. Now it would look as though those interested will have to be content with smaller things. The extent of territory remaining to be exploited is enormous—one company holds nearly 1,000,000 acres—and it is a reasonable supposition that further work will be attended with a fair degree of success.

In September, 1921, a concession was granted by the Government to capitalists in Los Angeles for the construction of a pipe-line from Puerto Mexico to Salina Cruz, under the stipulation that the work must be completed within 26 months.

UNITED STATES.

Throughout 1920 intensive activity prevailed in the United States of America in the production of oil, especially in the search for new supplies. activity arose, of course, in a large measure from the tempting prices obtainable for crude and most products, but it was also stimulated by the talk of scarcity and the extent to which the available stocks were becoming exhausted. Of the record total output of over 443,000,000 barrels, nearly three-fourths was contributed by three States—Oklahoma ranking first with nearly 108,000,000 barrels, Califormia second with about 105,000,000, and Texas third with 101,500,000 barrels. This condition of expanding output continued until June, 1921, when for the first time in the recent past a decline occurred. During the first six months of 1921 production amounted to 236,675,000 barrels (an annual rate of more than 473,000,000 barrels) as contrasted with a production of 211,360,000 barrels during the first half of 1920 ; imports increased more than 27,000,000 barrels ; exports increased 412,000 barrels, and consumption increased 12½ million barrels. California, with a production of 60,581,000 barrels, headed the list of oil-producing States for the half-year and showed an increase of 5,585,000 barrels over the production figures of Oklahoma, the next largest crude oil-producing State. During the last year and a half, California has produced 166,249,000 barrels, as against 160,721,000 barrels yielded by Oklahoma for the same period. An interesting point is the appearance of Arkansas, with an initial yield of 1,740,000 barrels in four months.

During the first six months of 1921 more than 38,000,000 barrels of petroleum were added to stocks, whereas in the same period of 1920 some 868,000 were withdrawn. The stocks on hand at the end of June totalled 151,308,000 barrels, irrespective of 9,709,000 gallons of Mexican crude. The imports of the latter for the half-year amounted to 66,276,850 barrels as against 39,009,200 barrels in the corresponding period of 1920. Exports—principally to Canada—were 4,427,400 barrels, a small increase. Exports for the twelve months ended June, 1921, amounted to the record total of 3,035,757,830 gallons, valued at $538,560,370. This compares with 2,823,504,820 gallons, valued at $426,349,160—for the twelve months ended June, 1920. In July both production and exports declined, the latter at 183,200,000 gallons being the lowest for two years, and this tendency became accentuated during August and September.

Stocks of crude and refined oil combined in the United States at the end of September totalled 270,261,000 barrels, of which 188,162,000 consisted of crude and 82,099,000 refined. Refined-oil stocks included 17,872,000 barrels of gasoline, 10,358,000 of kerosene, 29,730,000 of gas and fuel-oil, and 6,211,000 of lubricants. At the present rate of consumption, and allowing for three months supply as a minimum, these stocks represented a little more than 4½ months supply.

Official statistics show that in June, 1921 some 310 refineries were in operation, having a total treatment capacity of 40,000,000 barrels monthly. This represents about 70 per cent. of the total United States refinery capacity. In spite of the fact that gasoline exports declined during the first six months of the year, the total exports for the year ended June, 1921 increased 162,513,600 gallons over the previous corresponding period, and 173,992,300 gallons over the twelve months ended June, 1919. Shipments of the product to France and England also showed gains, exports totalling 146,146,640 gallons and 176,380,290 gallons respectively. However, gasoline exports to Canada continued to fall off, decreasing 15,125,210 gallons from 1920, and 22,929,560 gallons from 1919.

The following table indicates the quantity of gasoline exported to the principal countries, and the total amount shipped to all countries for the twelve months ended June, 1921, 1920 and 1919 respectively :—

EXPORTS OF GASOLINE (IN GALLONS) FROM U.S.A.

	1921.	1920.	1919.
France	146,146,635	117,021,429	120,723,580
United Kingdom ..	176,380,290	105,209,731	169,978,919
Canada	24,475,233	39,468,720	52,398,295
All other countries ..	296,212,096	218,000,754	125,131,154
Totals*	642,214,254	479,700,633	468,221,948

Appended is a comparison of the consumption of refined oils for the first six months of 1921 and 1920 :—

CONSUMPTION OF REFINED OILS IN U.S.A.

	Gallons. 1921.	Gallons. 1920.
Gasoline	2,300,115,990	2,142,705,363
Kerosene	938,737,302	1,038,493,344
Gas and Fuel	4,373,468,516	4,006,607,269
Lubricating	340,529,281	505,831,760
Totals	7,952,851,089	7,693,637,736

The net increase in consumption is 259,213,353 gallons, or a daily average of 710,447 gallons. The decrease in the utilization of lubricating oils reflects the industrial depression which has existed.

The course of gasoline production, consumption and stocks is shown in the following three-year comparison for the six months' period (in gallons) :—

ANALYSIS OF GASOLINE SITUATION IN U.S.A.

	1921. Six Months.	1920. Six Months.	1919. Six Months.
Stocks, Jan. 1	462,381,837	446,793,431	297,326,983
Production	2,573,543,547	2,178,281,185	1,911,152,705
Imports	14,835,056	21,686,348	6,782,925
Exports	286,564,512	286,657,962	177,798,652
Exports to ins. possess. ..	14,861,489	10,270,476	9,727,264
Domestic consumption ..	1,998,689,989	1,845,776,925	1,433,840,087
Stocks, June 30	750,644,450	504,055,601	593,896,610

The 1921 period was featured by the biggest stocks on January 1st and June 30th in the last three years, largest production, record home consumption and an extremely small decline in exports.

In connection with the recent investigation by the American Federal Trade Commission, the secretary of the Petroleum Institute submitted a memorandum relating to the "Prices of Petroleum and Its Products," analysing the statistical situation. The most pertinent table contained in the memorandum was one showing the growth in the number of automobiles in the United States each year and the increase in the oil-production of the United States, the percentage of increase of each, and the number of barrels of crude oil produced per car each year. The table is here inserted :—

	No. of Automobiles end of year.	Per cent. of increase over prev. year.	Year's production of Crude Oil (42-gal. bbls.)	Per cent. of Increase over prev. year.	No. of bbls. of Crude Oil each year per car.
		%		%	
1911	700,000	—	220,449,000	—	314
1912	1,020,000	45	222,935,000	1	218
1913	1,280,000	25	248,446,000	11	194
1914	1,711,000	34	265,762,000	7	155
1915	2,446,000	42	281,104,000	5	115
1916	3,545,000	45	300,767,000	7	85
1917	5,086,000	43	335,316,000	11	66
1918	*5,945,000	17	355,928,000	6	60
1919	7,559,000	27	377,719,000	6	50
	ESTIMATES.				
1920	9,984,000	32	402,626,000	7	40
1921	12,000,000	30	430,809,000	7	85
Average	increase ..	33	Average ..	7	—
Increase	1919 over 1911 in cars ..		.. ..	979	—
Increase	1919 over 1911 in production		.. ..	71	—

* To 1st December, 1918.

It is now apparent that the estimates of the number of automobiles for the year 1920, based upon statistics furnished by leading automobile organisations, were too high, and on the other hand that the year's production of crude oil in the United States was too low.

It is considered certain that the expansion shown in the production of petroleum in the United States during the eighteen months ended June, 1921 will not be approached in the next few years. The foremost feature of course is the slackening in the demand for petroleum products which has caused a retrenchment in operations all through the industry. Another factor is the relatively smaller amount of proven acreage available for drilling operations. The year 1920 saw more than 35,000 new wells completed in the United States alone. Oil men estimate that in Oklahoma 60 per cent of the proven acreage available at the beginning of 1920 was drilled during that year.

Imports of Mexican oil into the United States during 1920 amounted to 106,175,000 barrels, and 101,689,000 barrels were consumed in the refineries. At the end of 1920 stocks on hand at American refineries amounted to 7,442,000 barrels, as compared with 2,919,000 barrels at the end of the previous year.

WORLD'S PRODUCTION OF CRUDE.

As a result of the energetic drilling programme carried out in the United States and Mexico, the world's output of oil for 1920 again scored a large increase. According to the figures compiled by the American Petroleum Institute, the aggregate reached 688,474,250 barrels, an increase of no less then 133,769,200 barrels, or 24½ per cent. over the 1919 total. As before, the yield of the United States, although showing a substantial gain in actual quantity, represented a smaller proportion of the world's total—64½ per cent., as against 67½ per cent. for 1919, and 69¼ per cent. in respect of 1918. On the other hand, the production from Mexico was well on the way towards double that of the preceding year, representing 23¼ per cent. of the grand total, as against the proportion of 15½ per cent. for 1919. No useful conclusions can be drawn from the figures relative to Russia. Among the smaller producing fields, the most striking features are the set-back in the returns from Trindad and Egypt, the causes of which have been discussed. Appended are the figures in detail for the past two years; it should be mentioned that the 1920 statistics are subject to revision :—

	1920.	1919.
United States	443.402,000	377,719,000
Mexico	159,800,000	87,072,954
*Russia	30,000,000	34,284,000
Dutch East Indies	16,000,000	15,780,000
India	8,500,000	8,453,800
Roumania	7,406,318	6,517,748
Persia	6,604,734	6,289,812
Galicia	6,000,000	6,255,000
Peru	2,790,000	2,561,000
Japan and Formosa	2,213,083	2,120,500
Trinidad	1,628,637	2,780,000
Argentina	1,366,926	1,504,300
Egypt	1,089,213	1,662,184
France	700,000	—
Venezuela	500,000	321,396
Canada	220,000	220,100
Germany	215,340	925,000
Italy	38,000	38,254
Total	688,474,251	554,505,048

* No exact information available.

The estimated production of oil throughout the world in the first six months of this year is at the annual rate of 775,000,000 barrels. This represents an increase of 162,000,000 barrels, or 26 per cent., above the yearly average of 1919 and 1920, 62 per cent. over the war-time yearly average and 109 per cent. over the yearly average for the four years preceding the war. The following table shows the trend of crude oil production since 1911, giving yearly averages for four definite periods of industrial activity, the pre-war period, from 1911 to 1914 inclusive; the war period, from 1915 to 1918 inclusive; the post war years of 1919 and 1920, and the present annual rate (figures in barrels) :—

	1st 6 Mos. 1921 Annual Rate.	1919-1920 Yearly Average.	1915-1918 Yearly Average.	1911-1914 Yearly Average.
World	775,000,000	613,000,000	477,642,131	370,978,626
United States	473,400,000	410,560,000	318,278,645	239,398,300
Mexico	260,299,683	121,567,831	47,962,252	20,510,677
Percentage of World's Total :—				
United States	61%	67%	66%	64%
Mexico	33	20	10	5
U. S. Imports	132,000,000	79,500,000	26,250,000	6,750,000
U. S. Exports	68,000,000	66,500,000	61,250,000	44,100,000
Excess of Imports	64,000,000	13,000,000	..	..
Excess of Exports	..	..	34,750,000	37,250,000

Overproduction is accentuated in the United States by the growing excess of imports over exports, which in the first six months of 1921 was at the rate of 64,000,000 barrels for the whole year, as against a 13,000,000-barrel average in 1919 and 1920. In the war period exports exceeded imports by 34,750,000 barrels a year and before the war by 37,250,000 barrels a year.

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Section X.

RUBBER.

RUBBER.

WHAT ARE THE PROSPECTS OF RUBBER IN 1922?

Rubber touched its lowest level during 1921, owing to the slump in trade, which resulted in serious under-consumption.

The American Motor and Tyre trade shows signs of recovery at the close of 1921, and manufacturers are evincing a larger demand for Rubber. At the same time the effect of crop restriction is becoming more apparent in smaller supplies produced.

Some improvement in prices may be seen, but the price will probably not rise above 1s. or 1s. 3d., except in the event of an exceptional and unforeseen trade demand.

RUBBER.

A CRITICAL YEAR.

The past year will go down to history as the year of the great slump, not only in Rubber, but in most staple commodities. While a period of post-war depression, following overproduction in expectation of a trade boom, and the severe deflation policy encouraged by Governments, was not unexpected to the far-sighted, the severity of the slump was unexpected and unparalled. Rubber prices at the close of 1920 were steady at not far from the 1s. per lb. level. The quotation for first crepe during December of that year varied from 10d. to 1s. 1$\frac{3}{4}$d., but the average for the whole year was 1s. 11d. for first grade rubber.

The year 1921 opened with an advance to 1s. 3$\frac{1}{2}$d., but prices steadily sagged until June, when the low level of 8d. per lb. was established. This price held in August and September, but thereafter the market established a rise of about 1d. per lb., and quotations recevered to nearly 10d. in October.

For a full explanation of the slump it is necessary to go back to 1919, when America entered upon an extensive production programme in expectation of an unprecenented demand for cars and a boom in world trade. The disappointment of this hope and the subsequent deflation policy undertaken by the banks as an antidote to high prices and currency inflation are now matters of history. For the first four months of 1920 the United States imports of rubber were at the rate of 375,000 tons per annum, that is, far in excess of the world's entire production. During the remaining eight months of that year a heavy slump counteracted the activity of the earlier period and American imports for the whole year fell below 240,000 tons. The financial stringency continued until the middle of 1921, when the reduction of the rate of the Federal Reserve Bank from 7 per cent. to 6 per cent. following reductions in the Bank of England rate in April and June, made the financial position easier. Manufacturing, both in the United States and the United Kingdom, was gradually resumed on more normal lines. The recovery of the motor trade in both countries was favoured by the unusually fine summer, which encouraged the widespread use of private cars and char-a-bancs. Too much leeway had been lost, however, and the conditions of labour, politics and European exchanges precluded the possibility of a rapid recovery.

The Rubber Surplus.

Until nearly the end of 1920 rubber production was in full swing despite the falling off in the trade demand. It became evident that, with the automatic increases in output due to the natural rise in the ratio of production and also to the bringing of new areas into tapping, the production of rubber was much in excess of demand. To meet this situation a policy of 25 per cent. restriction of output was initiated by the Rubber Growers' Association, beginning in November, 1920. This curtailment, which was based on the estimated outputs for 1921, and

not on an ascertained production, was soon proved to be inadequate. Demand continued to fall away, and in July, 1921 a proposal to restrict outputs by 50 per cent. was put forward by the Association in conjunction with a scheme for a Rubber Producers' Corporation. The suggestion was only partially supported, but was not without its effect, and was reinforced by the involuntary curtailment of production by companies unable to carry on in a normal fashion with a selling price of rubber below the cost of production.

In the meantime attention was drawn to the steady increase of rubber stocks owing to the excess of supply over demand. Figures of a reliable character were difficult to obtain on account of the distinction between "visible" stocks, or those held in the produce markets and afloat, and "invisible" stocks, or those in manufacturers' hands but still in a crude form.

The only reliable figure is that of the London and Liverpool markets, where stocks of raw rubber increased from 56,000 tons at the beginning of 1921 to 79,000 tons at the end of June.

World stocks of all kinds in July, including rubber on estates, in transit to and at ports of shipment, afloat, in warehouse at ports of arrival, and in the hands of manufacturers, were estimated by the Rubber Growers' Association at 300,000 tons. On the basis of seven months' consumption as the amount necessary for the normal working of the industry, that is, about 150,000 tons, there was a surplus of 150,000 tons in existence at the middle of the year. This figure was necessarily only an estimate, and did not agree with other computations.

The surplus of rubber held in October was estimated by Messrs. Symington & Sinclain, the well-known Mincing Lane rubber brokers, as follows :—

Surplus (October, 1921).

	Tons.
United Kingdom Stocks*	80,000
U.S.A. Stocks	29,000
Afloat	36,000
Stocks in Holland and other minor markets	2,500
Stocks in the East	45,000
Total	193,000
Less necessary supply	135,000
Real surplus ..	58,000

* London 70,000, Liverpool 10,000,

The figure thus arrived at was based on reliable cable advices from various sources, and on the same basis of calculation compares with a surplus of 100,000 tons at the end of 1920.

World's Production.

Production of rubber during 1921 has been considerably modified from the normal by factors arising from the effects of the slump. Eastern plantations supply the major part of the world's rubber. The planted area at the beginning of 1920, according to figures compiled by

the Rubber Growers' Association, was 3,300,000 acres, including some 605,000 acres of native holdings, mostly in small estates of less than 100 acres. About two-thirds of this area was bearing in 1920, or 2,200,000 acres, and the maturity of new areas increased this figure to about 2,460,000 acres in bearing for 1921. On the basis of an average production of 315 lbs. to 320 lbs. per acre under normal price conditions, an output of some 350,000 tons might have been realised. To this would have been added normally some 40,000 tons from Brazil, and 10,000,000 tons from other countries, such as Africa and Central America. Under the conditions actually operative, production for the past three years has been estimated as follows :—

World's Production.

	1919	1920	1921 (Estimated)
	Tons.	Tons.	Tons.
Malaya	180,000	190,000	130,000
Ceylon and India	35,000	40,000	25,000
Dutch East Indies	75,000	85,000	55,000
Other Countries in the East ..	10,000	15,000	10,000
Total Eastern Planations ..	300,000	330,000	220,000
Brazil	32,000	31,000	20,000
Wild	7,000	7,000	5,000
Total ..	339,000	368,000	245,500

The 1919 figures are adjusted to show actual production as against "shipment" as, owing to lack of freight, about 68,000 tons of the 1918 production was not shipped till 1919.

The most potent factor in modifying outputs during 1921 has been crop restriction, both voluntary, under the 25 per cent. and later the 50 per cent. schemes of the Rubber Growers' Association, and involuntary in respect of estates that have been compelled to cease tapping owing to inability to pay their way at current prices. Most of the native holdings in the East have gone out of tapping altogether, and probably as much as a quarter of the total planted area has been unproductive. The reduction of the output of cultivated rubber from all causes has probably been 100,000 tons, or nearly one-third.

Brazilian rubber supplies have fallen off considerably. Receipts at Para for the eight months to August were only 12,800 tons, compared with 20,800 tons for the corresponding period of 1920. Brazilian rubber costs about 1s. 6d. per lb. landed in Liverpool, and production has fallen off as a natural consequence of the fall in prices having made collection unprofitable. Wild rubbers from the Congo, Central America and other districts, with the exception of a few of the better grades, became entirely unprofitable during the year, and very little business was done in them.

Consumption in 1921.

Owing to the existence of the surplus already referred to, the actual amount of which is difficult to determine, the question of estimating consumption of rubber during the past year presents great difficulties. Any attempt to solve the problem is largely a matter of deduction. Setting imports against exports for most countries gives little assistance, owing to the unascertainable amount of "invisible" stocks or rubber taken off the market and

held by manufacturers. It is believed that the world's consumption of rubber during the past three years was as follows:—

World's Consumption.

	1919	1920	1921 (Estimated)
	Tons.	Tons.	Tons.
U.S.A.	230,000	220,000	210,000
United Kingdom	33,000	25,000	24,000
France	22,000	14,000	12,000
Italy	14,000	6,000	3,000
Canada	9,500	11,000	12,000
Australia and Japan	10,000	9,000	24,000
Germany, Russia and Austria	5,500	9,000	9,000
Scandinavia	3,500	6,000	6,000
Belgium	2,000	2,000	2,000
Other Countries	2,500	1,000	1,000
Total	333,000	303,000	303,000

American Trade.

Any discussion of the world's rubber consumption naturally hinges on the position of the trade in the United States, which absorbs nearly 75 per cent. of the total production. Trade depression in the United States reached its worst stage about the middle of the year, since when recovery has been slow but steady. In July the Goodyear Company, which had previously undergone a process of reorganisation, resumed full time working, and the Ford Company, which had completely stopped working, began to turn out cars at a greater rate than ever before in its history. In the early part of the year American manufacturers curtailed their activities to such a degree that the consumption of rubber dropped by from 33 to 40 per cent. The industry thus working on a reduced basis required smaller normal stocks and a large visible surplus appeared apart from the over-production of rubber.

The following table shows American net Imports (Exports deducted) for 1919, 1920, 1921. Owing to Import restrictions in the last six months of 1918, the stock in America was reduced to practically nil and what small available supplies there were in New York were saleable at a dollar or over. An American stock of 5,000 tons is assumed at the end of 1918, which is probably over the mark.

American Net Imports.

	1919	1920	1921
	Tons.	Tons.	Tons.
January	10,200	29,403	11,495
February	14,823	31,790	9,470
March	28,677	36,572	12,450
April	27,381	28,029	10,887
May	24,599	19,442	10,250
June	16,184	19,244	15,129
July	23,304	20,166	11,962
August	9,913	19,358	14,778
September	13,523	11,850	—
October	19,236	8,332	—
November	24,804	14,462	—
December	24,328	10,096	—
Total	236,972	248,744	96,421

			Tons.
STOCK end December,	1918		5,000
IMPORTS	1919		236,972
,,	1920		248,744
			490,716
CONSUMPTION	1919	230,000 tons	
,,	1920	190,000 ,,	420,000
Carried into 1921			70,716

At the present time the United States has something like 9½ million motor vehicles in use, which consume on the basis of 4½ tyres per car per year, averaging 9 lbs. per tyre, about 170,000 tons of rubber. Allowance must be made for the surplus stock of manufactured tyres carried over from 1920, which would reduce requirements to 140,000 tons. On the other hand recognition must be given to the fact that for financial reasons American manufacturers had depleted their stocks of manufactured goods to a very considerable extent. Stocks of tyres at the end of November, 1920 amounted to 5,880,000, but had been reduced to 4,112,000 by the end of July, 1921. This was equivalent to only one tyre for every two vehicles in use, a dangerously low reserve in view of contingencies. America requires annually some 35,000 tons of rubber for mechanical rubber goods, 20,000 tons for footwear, and 15,000 tons for general purposes. The total consumption may therefore be estimated at 210,000 tons for 1921.

Assuming a stock of 71,000 tons of crude rubber carried in from 1920, and net imports as shown above, of 96,500 tons, the total supply of rubber for the first eight months of the year was 167,500 tons. Putting the consumption of the first eight months at 130,000 tons, America was left with only 37,500 tons on hand at the 31st August, or two months supply. This foreshadows a revival of demand and higher prices towards the end of 1921 and in the early part of 1922.

[Figures of the American motor and tyre industries will be found in the supplement].

United Kingdom Trade.

In all the discussion of rubber stocks and visible supply it has only lately been fully recognised that London as the centre of the world's rubber markets, forms the dumping ground for supplies not wanted elsewhere, and thus affords the best general index to the position. London stocks, which amounted to 50,000 tons at the beginning of the year reached their highest point of 73,200 tons in August. With improving American demand a decline then set in, and stocks were reduced to 70,000 tons at the end of October. An illustration of the movement which led to the piling up of London stock from September, 1920 until July, 1921, when the reverse movement set in, is afforded by the export figures from the United Kingdom to the United States, as follows :—

United Kingdom Exports to United States America.

1920.	Tons.	Tons.	Tons.
January ..	5,625	January ..	178
February ..	3,398	February ..	134
March ..	5,484	March ..	999
April ..	3,427	April ..	2,006
May ..	2,104	May ..	421
June ..	2,243	June ..	484
July ..	1,096	July ..	1,588
August ..	1,252	August ..	2,718
September ..	122	September ..	3,348
October ..	33	October ..	1,319
November ..	30		
December ..	35		

A closer form of evidence is afforded by a study of the amount retained in Great Britain, or net imports less exports. From May 1920 until September, 1921, the normal retention of rubber should not have exceeded 2,500 tons per month, or a total of 40,000 tons. In point of fact, it exceeded 93,000 tons, or a surplus of 53,000 tons, which, in conjunction with the slow purchasing by America, largely explains the slump in prices. The figures in detail are given below :—

Retained in United Kingdom.

	Gt. Britain retained (in tons).	Plantation rubber (per lb.)	
		Highest.	Lowest.
1920.		s. d.	s. d.
May	203	2 2¼	1 10¾
June	4,493	2 1	1 10¾
July	6,124	2 0	1 9¼
August	7,381	2 0	1 9¼
September ..	7,179	1 9	1 6
October ..	9,588	1 6½	1 4
November ..	9,073	1 3	1 0¾
December ..	6,277	1 1¾	0 10
1921.			
January ..	9,396	1 3½	0 11¼
February ..	6,316	1 2¼	1 0¾
March	6,955	1 0¾	0 11½
April	6,950	0 11½	0 10¼
May	6,075	0 10¼	0 8¼
June	4,064	0 9	0 8
July	3,724	0 10	0 8¾
August	186	0 9¼	0 8
September ..	817	0 9½	0 8¼
October ..	719	0 10¼	0 8¼

On the basis of the figures given, which show an actual decrease in September and October amounting to 1,500 tons, it would appear that the tide is on the turn, and that prices may be expected to respond by an upward curve.

Consumption, so far as other countries are concerned, has been virtually stationary, with the exception of Japan. This country has developed an appetite for rubber on an abnormal scale. Imports to September were 15,200 tons, and Japan will probably take as much as 20,000 tons for the Thole year. Russia, which before the war took as much as 11,000 tons (in 1914), is almost out of the market. Germany and Austria, which took an aggregate of 18,500 tons in 1913, are importing relatively small quantities.

Generally speaking, the world outside America should take about 90,000 tons for 1921, or much the same amount as in 1920.

Balance of Supply and Demand.

Owing to the combined effects of restriction and the slow improvement in trade demand, partly due to the depletion of American invisible stocks, a somewhat better outlook for the industry appears at the close of 1921. The position was summed up by Mr. C. Heath Clark at the annual meeting of Harrisons & Crosfield in October. Mr. Clark expressed the belief that the actual consumption of rubber had never been going on faster than during the past year. The increase of stocks in London and other centres he explained by the fact that owing to abnormal financial and trade conditions the actual consumption had been provided for very largely from invisible stocks in the hands of manufacturers, wholesale dealers and shopkeepers, and that there had only been taken from first hand producers of raw rubber just sufficient to make up the difference between what was available from the invisible stocks and actual consumption, leaving the balance of the year's production of raw rubber to accumulate. Mr Clark said :—" As a result of the restriction, voluntary and involuntary, it appears probable that the total production of raw rubber this year will not exceed 280,000 tons, and that the amount of raw rubber bought by manufacturers during the same period will be about 250,000 tons. I think it is safe to conclude that by the end of this year the invisible stocks, both of raw and manufactured rubber, will have been used up to the fullest extent possible, and that next year the demand for raw rubber must again be fully equal to the actual consumption, and amount to not less than 300,000 tons, and very possibly to 350,000 tons.

" The motor industry accounts for about two-thirds of the consumption. It is estimated that, just previously to the war, there were about 2,000,000 cars running ; that in 1918 the number had increased to between 7,000,000 and 8,000,000, and that to-day it has reached a total of 12,000,000. This gives us some idea of the progress achieved in seven years and of the way in which the world's real need for rubber has increased and is increasing. I know of no source of rubber consumption that can be said to be declining, but, on the other hand, there are constantly new uses being added to those already in existence, and I have no doubt as to the ultimate soundness and value of rubber-producing industry."

The Restriction Policy.

The most important step taken to deal with the rubber crisis was that of the Rubber Growers' Association in its advocacy of the policy of crop restriction. The first recommendation was for a restriction by 25 per cent. of the normal production of rubber by estates, commencing in November, 1920. This was accepted and carried out by 90 per cent. of the Association's membership, but did not receive sufficient support from non-members to make it effective. The position became more critical, and in July, 1921, the Association put forward proposals for an extension of curtailment of crops to 50 per cent. of the normal in conjunction with a scheme for the formation of a Rubber Producers' Corporation. The main objects of this combine were to control rubber outputs of the members, to fix selling prices and regulate sales and the opening of further land, and to purchase or make advances on the rubber harvested by members. The nominal capital proposed was £2,000,000 in £1 shares, with borrowing powers up to £8,000,000. Allotment was contingent on the agreement of members owning 2,200,000 acres, inclusive of the Dutch Corporation membership. The scheme fell through owing to the failure of the Dutch interests and certain British interests, particularly in Ceylon, to agree.

Voluntary restriction as a policy had become well established, however, and outputs were further curtailed by forced cessation of tapping on native holdings and on estates which could not pay their way at ruling prices. It was estimated that production of all grades of rubber

for the first nine months of the year showed a decrease of 28 per cent. compared with 1920. Owing to the various degrees of restriction in force, from 25 per cent to 50 per cent., and total cessation, a reduction of some 30 per cent. for the whole year may be anticipated.

Companies and the Crisis.

The effect of the rubber crisis on plantation companies became evident at the beginning of the year. Dividends were almost non-existent and were only paid by a few companies which were in the fortunate position of having made good forward sales or were otherwise exceptionally placed. Shortage of labour in the Federated Malay States, heavy losses on rice supplied as food to the labour forces, and losses on rupee and guilder exchange were features of most of the annual reports for 1920 and 1920–21. So far as rice and exchange are concerned the position has been much improved, but labour is likely to remain a difficulty, particularly in Malaya, owing to the return of coolies to India. The general decline in profits transformed the excess profits duty, now abolished, from a heavy burden into a positive advantage, owing to the amounts companies were able to claim as refunds. Many companies growing rubber found it necessary to obtain fresh funds by debenture or note issues at a high rate of interest, and several reconstructions took place. Severe economy became general, and costs were cut to the utmost. In this respect there would appear to be an irreducible minimum. An investigation of 64 companies with estates in Malaya showed that the average cost for all grades of rubber was as high as 1s. 3¼d. In

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Government Inquiry.

In October the result of numerous representations to the Colonial Office on behalf of the industry led to the appointment of a committee by the Colonial Secretary to inquire into the rubber situation. The terms of reference were :—

"To investigate and report upon the present rubber situation in British Colonies and Protectorates for the information of the Secretary of State for the Colonies, and to advise what remedial measures should be taken to improve the existing situation."

The committee was constituted of the following :—Sir James Stevenson, Bart. (commerical adviser to the Colonial Secretary), chairman, Mr. G. E. A. Grindle (Colonial Office), Sir Stanley Bois (chairman, Rubber Growers' Association), Sir Edward Brockman (Malay States Agency), Mr. E. J. Byrne (Dunlop Rubber Company), the Hon. Wm. Duncan (Straits Rubber Company), Mr. Eric Miller (Harrisons & Crosfield), and Sir Edward Rosling (Anglo-Ceylon and General Estates Company). with Mr. S. H. Leake, O.B.E. (Colonial Office), secretary.

The inquiry was regarded in the market as having been inspired more by the falling off in revenue from taxation than from any solicitude for the planting industry. The Malayan Government was feeling severely the effects of lack of money, and had already appointed a commission to investigate the situation there. Should the committee be able to formulate a practicable scheme for temporary cessation of tapping or restriction to a certain output per acre, above which a heavy export duty would come into force, it was believed that the position would be greatly improved. Moreover, a scheme backed by Government authority would probably act as an inducement to Dutch rubber interests to fall into line.

Rubber Shareholders' Association.

A significant step during the year was the formation in October of a Rubber Shareholders' Association, headed by a joint committee of Stock Exchange and Mincing Lane brokers and large shareholders. The programme of the Association was sixfold :—

1. (1) The establishment of a factory owned and controlled by the planting industry, with a capital of £500,000 provided by companies on an acreage basis.
2. (2) A propaganda fund of £25,000 to be raised by companies on an acreage basis.
3. (3) A fund of rubber provided by companies for experimental and propaganda purposes.
4. (4) Encouragement of restriction of output.
5. (5) Discouragement of forward selling.
6. (6) A "rubber parliament" or council, comprising representatives of planters, shareholders, merchants and brokers, manufacturers, distributors, and consumers.

New Uses Propaganda.

Considerable interest was taken in the competition for new and extended uses of rubber for which prizes aggregating £5,000 were offered by the Rubber Growers' Association. The results were extremely disappointing from the point of view of novelty. Out of some 12,000 suggestions sent in by 2,000 competitors there was hardly an idea that had not been suggested by Goodyear, the discoverer of vulcanisation, in his book published in 1855. Failing originality, the judges took as their main criterion the weight of rubber consumption and practicability in relation to manufacturing and cost. The chief awards were :—£1,000 for the suggestion of using sponge rubber for general upholstery purposes, including the making of mattresses, divisible among 114 competitors ; £500 for the suggestion of incorporating rubber in liquid form with paint or other composition for use in the preservation of wood and metals against the action of the sea and in prevention of the fouling of ships' keels, divisible among five competitors ; £500 for the suggestion of the use of rubber in paint for general decorative and preservative purposes, divisible among nine competitors ; £500 for the suggestion of the use of rubber for the vallances and mudguards of motor-vehicles, divisible among eight competitors ;

Ten prizes of £100 were awarded for the ten suggestions stated below :—(1) Incorporation of rubber with cement for building purposes, divisible among two competitors ; (2) Use of rubber as an heat retaining covering for hot-water cisterns ; (3) Use of rubber for the construction

of sea buoys, divisible among four competitors ; (4) Use of rubber for the lining for egg-boxes, divisible among three competitors ; (5) Use of rubber in the construction of ship and wharf fenders, divisible among 32 competitors ; (6) Use of rubber for washstand tops, divisible among 18 competitors ; (7) Manufacture of soft rubber buttons, divisible among 31 competitors ; (8) Use of rubber under carpets in place of underfelts or felt paper, divisible among 35 competitors ; (9) Use of rubber channelling in place of putty for fixing glass in windows, divisible among three competitors ; (10) Use of rubber for moulded blind acorns and cistern chain handles, divisible among eight competitors.

The Outlook.

Rubber touched its lowest point in June, and has since recovered a few pence, but still stands below the average cost of production. Trade revival in all countries has been slow and disappointing. Russia and Austria are still largely out of the market, but a better inquiry has been growing from the United States of America. This, in conjunction with the restriction of outputs, points to some improvement in price from the present (December) level of about 11d. per lb. At the same time the large surplus stock militates against a rapid rise. On the other hand, the present price is an uneconomic one, which the industry cannot sustain for any long period. A recovery to 1s. per lb. may be anticipated early in 1922, or even before, but unless general conditions radically improve no higher price than about 1s. 3d. may be expected for some time to come.

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Section XI.

COPPER.

COPPER.

PROBABLE COURSE OF PRICES IN 1922.

A heavy accumulation of copper at the beginning of the past year was accompanied by a serious falling off in consumption.

To remedy this state of affairs, production in the United States was cut down to 11 per cent. of the normal, while the output of mines elsewhere on the American Continent was reduced by more than half.

In addition the United States Copper Export Association, by agreement with a syndicate of American Bankers, issued $40,000,000 of short term notes to finance the purchase of 400,000,000 pounds of the surplus copper. This quantity of metal was taken off the market and is being gradually released for export only.

The last quarter of 1921 found buyers much more active than earlier in the year, and stocks of copper were greatly reduced. It appears probable that copper will fluctuate between £70 and £80 per ton during the first half of the year 1922, while later, should trade revive sufficiently, the price may mount to near £90.

COPPER.

Abnormal conditions have again governed the course of the copper market during the past year. The violent fluctuations in the world value of currencies of different nations, together with general labour unrest, have continued to act as a drag on the wheels of trade, with the result that the demand for copper, as with other commodities, has been reduced to very small dimensions. During 1921, even more so than in the previous year, consumption failed to come up to expectations, and, had it not been for the drastic curtailment of production in America, ending in the case of most of the big mines with a complete cessation of output, the world would have been flooded with copper, and prices reduced to a level which may be left to the imagination.

When the short post-war boom ended, and the slump in commodities set in, in 1920, it was thought in many quarters that the period of low prices would be of brief duration. It appeared to be more or less overlooked that, after a war of unprecedented costliness, most nations had expended their liquid resources and that the victors, themselves, would have to carry a burden of enormous taxation. The stagnation in trade has hit the copper market as hard as any, and, although signs are not lacking of an improvement in the existing state of affairs, it is early days yet to forecast any substantial and lasting advance in the quotation of the metal.

American Control.

The output of copper is largely controlled by very powerful organisations which have not been slow to take steps to make production commensurate with consumption and check in a measure the downward tendency of the market. The most influential of these bodies is the United States Copper Export Association. It came into existence in December, 1918, following the suggestion that the formation of combinations in Great Britain, France, and Italy might take the control of copper prices out of American hands, when normal business was resumed, by the setting up of central purchasing agencies. This Association is qualified under the United States Webb Export Trade Act to engage in the copper export trade. It is the exclusive medium for export sales of copper by companies which in the aggregate represent about 75 per cent. of the total production of the United States. Its professed object is to eliminate competition and maintain prices. The President is Mr. John Ryan, of the Anaconda, Inspiration and Consolidated Copper Companies.

Financing United States Accumulations.

At the beginning of the past year the big American producers found themselves saddled with enormous stocks of refined copper, while at the same time demand was reduced to extremely small proportions. With a view to easing the difficulties caused by this situation, it was arranged to take 400,000,000 pounds of refined copper—approximately 60 per cent. of the surplus then held in America—off the market and to reserve it for export. This action is fraught with so much interest to foreign buyers in the immediate future that it calls for mention in detail. The withdrawal was financed by the Copper Export Association issuing to a banking syndicate on February 15th, 1921 $40,000,000 of eight per cent. short term notes on the security of the quantity of copper already mentioned. These Notes are due for redemption as follows :—$6,000,000 on 15th February, 1922 ; $10,000,000 15th February, 1923 ; $12,000,000, 15th February, 1924 ; and $12,000,000, 15th February, 1925. They are guaranteed as to principal and interest by the following copper companies in their several proportions :—Phelps-Dodge Corporation, 10·90% ; American Smelting and Refining Co., 5% ; Calumet and Hecla Mining Co., 6% ; Utah Copper Co., 8·20% ; Chile Exploration Co., 7·58% ; Kennecott Copper, 5·06% ; Braden Copper, 5·95% ; Ray Consolidated, 4·00% ; Chino Copper, 3·66% ; Nevada Consolidated, 4·45% ; United Verdi Copper, 5·00% ; Anaconda Copper, 12·26% ; Inspiration Consolidated, 8·45% ; Greene-

Cananea Copper, 4·63%; New Cornelia Copper, 4·07%; North Butte Mining, 1·75%; Utah Consolidated, ·34%.

In effect the Association purchased to resell in foreign markets 400,000,000 pounds of refined copper from the producing copper companies above mentioned and it will pledge with the trustee as security for the $40,000,000 of Notes receipts of refining companies for all of the said copper, with the exception of an amount not exceeding 3½% for which the Calumet and Hecla Mining Co. will issue its own receipts. The Association will withdraw copper pledged under the trust agreement to the extent of at least one-third of all deliveries made against its export sales of copper. Copper may be withdrawn under the trust agreement only upon payment to the trustee of 12½ cents (in cash or Notes) per pound of copper withdrawn. The Guarantee Trust Co. is acting as trustee of the 400,000,000 pounds of refined copper, which has been lodged at a collateral value of 10 cents per pound. Already a considerable proportion of the Notes due for redemption in February, 1922, have been redeemed.

Stimulating Demand.

The withdrawal of this large quantity of copper naturally relieved the American market to an appreciable extent, but it did not stimulate in any way the domestic demand for the commodity. To widen the uses of copper on the American Continent a new unincorporated and voluntary organisation, entitled the Copper and Brass Research Association, was formed. It has at its head the president of one of the leading copper-producing firms in the United States. Membership is open to producers of copper or selling agents of copper in the United States, to workers of copper, brass and copper products generally in the United States and the Dominion of Canada, and to others directly engaged in or connected with the copper and brass industries. Most of the big copper interests in America have joined the Association which, if it shows initiative and energy, should do much to stimulate, by co-operative effort, the use of copper, brass and copper-alloy products not only on that side of the Atlantic, but in Europe also.

Commercial bodies in Michigan, which is one of the largest producing States, have also been making organised efforts to increase the demand for copper in various manufacturing circles. A light-weight, durable travelling bag or sample case of lacquered sheet copper has been produced to take the place of the leather article. Confectioners have been persuaded to use thin sheet copper boxes for their products, the box being sufficiently attractive and useful to have a selling value apart from its contents. Copper strips have been introduced between the leaves of motor-car springs. Holes are punched in the copper which hold grease for lubrication, thus eliminating squeaks. A spring so made is said to be more resilient.

In copper producing circles, however, the idea is gaining ground that the future of the metal depends largely on its employment more generally for purposes requiring a larger volume of the material. This, in many cases, will involve the standardisation of parts. The building trade holds out much hope in this direction. By the cheapening aid of mass production it is suggested a great deal of copper could be used for various purposes in the building industry. There is no question of the superiority of copper and brass for a vast number of uses for which substitutes are now being employed. The latter, though, once firmly implanted may prove difficult to oust. Even now, with the price of copper halved and stocks abundant, many manufacturers are displaying little inclination to purchase the commodity. Various other steps are being taken to promote sales, and in the El Paso district the townsfolk have adopted and exhibit in all the stores the slogan, "Buy Something Made of Copper." The efforts to popularise the metal may suceed; there is certainly a big field for cultivation.

The World's Output.

Although during 1919 and 1920 the world's output of copper was appreciably curtailed, the production was on almost as large a scale as in the years immediately preceding the war, and it was not until the second quarter of 1921, when it was found that consumption continued to languish, that any really big effort was made to restrict supplies. Then the United States output was cut down to approximately 11% of the normal, while the South American total was reduced by rather more than half. Elsewhere, in Australia and Europe, labour troubles had brought about a big falling off in the respective outputs. In the aggregate the world's production of the metal for 1920 amounted to 984,500 tons, or roughly 20,000 tons more than in 1919, but a reduction of 450,000 tons, approximately 31%, when compared with the high level reached in 1917.

Of the quantity produced in 1920, by far the largest proportion came from North America, the output from that quarter at 669,000 tons being 68% of the whole. Next came South America with 136,000 tons, or nearly 14%, Japan with 65,500 tons, less than 7%, while the whole of Europe rendered only 50,600 tons, or 5% of the total output. Africa contributed approximately 3% and Australia rather less. In the first category, namely, North America, the United States easily topped the list with 576,500 tons, or 58% of the world's total; then came Mexico with 50,500 tons, followed by Canada with 35,500 tons. Of the South American contribution, Chile was first with 94,500 tons, next Peru with 31,000 tons, while Bolivia gave the small, but steadily growing, return of 9,900 tons. Among the European producers Spain and Portugal together supplied 25,000 tons—a great falling off from their output of nearly 60,000 tons in 1912.

With the virtual certainty that the United States will long remain the dominant country in the production of the metal, the appended tabulation of the outputs of the various States will be useful in revealing whence supplies are derived and the manner in which production has fluctated. The figures have been compiled by the United States Geological Survey.

Production in United States, in 1,000 lbs.

STATE.	1914.	1916.	1918.	1920.
Alaska	24,986	113,823	67,082	—
Arizona	382,450	694,847	769,522	559,235
California ..	29,784	43,400	44,151	12,934
Colorado ..	7,316	9,536	7,592	3,600
Idaho	5,875	7,248	5,837	2,203
Michigan ..	158,010	269,794	231,096	—
Montana ..	236,806	352,139	326,427	176,600
New Mexico ..	64,205	79,863	96,560	54,000
Nevada	60,123	100,816	106,267	55,790
Utah	160,590	232,335	230,965	117,000
Washington ..	684	2,473	2,331	2,394
Eastern States & other centres	19,310	21,570	20,309	—
TOTAL ..	1,150,137	1,927,850	1,908,534	1,235,000*

* Total production including States for which returns were not available.

It will be seen that by far the biggest outputs have been made by Arizona, the annual yield in most cases amounting to more than a third of the aggregate production of the States. It may here be noted that taxation in the United States has increased considerably, and when consumptive demand does revive on a large scale, this factor will militate against cheap supplies coming on the market. At a meeting of the Arizona Chapter of the American Mining Congress held in the Autumn of 1920 the grave situation facing the copper mining industry in this respect aroused wide concern. It was stated that the selling price of copper was then four

cents per pound less than the average selling price based upon ten years previous to the Great War; that practically every cost attached to the mining industry had risen to a height entirely inconsistent with pre-war conditions. Taxation in the State was responsible for a charge of 1·7 cents in the net cost of every pound of copper produced.

The next table shows the growth of the United States smelter production since 1870. When the statistics of the commodity first began to receive anything like close attention, about 1845, the United States produced only 224,000 pounds of copper. By 1848 the output had increased to 1,000,000 pounds, a total which in turn was doubled within three years. During the next decade production advanced to well over 20,000,000 pounds. The Civil War witnessed a set-back, but since then the yearly total has more or less steadily increased.

United States Smelter Production.

Year.	Production in lbs.	Year.	Production in lbs.
1870	28,224,000	1910	1,080,159,509
1875	40,320,000	1911	1,097,232,749
1880	60,480,000	1912	1,243,268,720
1885	165,875,766	1913	1,224,484,098
1890	259,763,092	1914	1,150,137,192
1895	380,613,404	1915	1,388,009,527
1900	606,117,166	1916	1,927,850,548
1905	888,784,267	1917	1,886,120,721
1907	868,996,491	1918	1,908,533,595
1908	942,570,721	1919	1,310,972,000
1909	1,092,951,624	1920	1,235,000,000

Other Producers.

Japan.

Outside the American Continent the biggest copper producer is Japan. From 53,400 tons in 1911, the output increased to 108,000 tons in 1917, dwindled to 90,300 tons in 1918, and in 1920 totalled only 65,500 tons. For a time during the latter period the Japanese made big purchases of copper in the United States with a view to capturing Germany's Eastern trade, but the financial crisis which developed in the country put an end to the buying, and further left them with large stocks on their hands. While production in Japan is on the down grade, demand is expanding, and it is probable that in future the output from the mines will be consumed in the country.

Australia.

In Australia the production and marketing of the commodity is now controlled by the Copper Producers' Association Proprietary, Ltd., an organisation formed in 1917. In 1911 the output of the various properties was 46,000 tons, but in 1920 it had fallen to 26,500 tons, after being down in the previous year to 16,500 tons. Costs in Australia are very high on the whole, and at the present level copper is being produced at a loss. Labour's demands are extremely exacting, and in Queensland, for instance, the policy of certain of the trade unions is that if an industry cannot pay the high wages asked by the workers the industry must cease to exist. By far the greater portion of the Australian output comes to this country in the form of ingots and matte.

Future Output of Belgian Congo.

The African Continent must be regarded as a growing contributor to the world's output and one which, in the not distant future, may rank second only to the United States. In the three years preceding the war the production averaged 19,000 tons. In 1917 it reached 42,700 tons, but declined to 32,200 tons in 1920. Of the latter total the Belgian Congo was responsible for 19,000 tons, and it is in that quarter that the most important increase is to be anticipated. The controlling concern there is the Union Miniere du Haut-Katanga. The copper deposits of the Katanga are of great extent and can be worked very cheaply. The present production of the Union Miniere is at the rate of 40,000 tons per annum, but in the next six or seven years this total will be raised to 140,000 tons, one-half electrolytic, delivered in Europe at a cost, based on pre-war conditions, of about £37 per ton. Prior to 1914 the output was sold to Germany, and it is possible that that country may again be its chief purchaser.

Spain and Portugal.

Of the European production Spain and Portugal contributed the lion share. Their combined output in 1912 was 60,000 tons, but during the latter part of the war it was little over 40,000 tons, and in 1920 fell to 25,000 tons. Labour trouble at the Rio Tinto mines was a big factor in the latter decline.

Russia.

Russia in 1913 and 1914 averaged over 33,000 tons, but with the introduction of the Bolshevik regime production has virtually ceased. When order once again reigns in that land of immense mineral resources, it should be remembered that the properties of the Russo-Asiatic Consolidated alone have a capacity of 14,000 tons of copper per annum.

Supplies keep Pace with Demand.

The enormous demand for the metal for war purposes resulted in the world's output expanding during 1917 to the unprecedented total of 1,434,433 tons. As is well known, the major portion was purchased by the Allied Governments and although production was greater than ever before, the individual user of copper for ordinary commercial requirements was forced to a very large extent to use substitutes. The latter are still being extensively employed, but, sooner or later, the red metal will assuredly come into its own again. For many years past the engineering and electrical industries have been making increasing demands for copper, and when the electrical age proper is reached the consumption of the commodity may easily outrival even the big war-time outputs.

So far, however, production has always kept pace with demand and it seems unlikely that the position will be reversed in at any rate the near future. The following

interesting table, compiled from various sources by Dr. F. H. Hatch, past president of the Institution of Mining and Metallurgy, shows how the world's output of copper has expanded since the beginning of the nineteenth century :—

World's Output of Copper.

Year.	Metric Tons.	Year.	Metric Tons.
1803	15,000	1863	96,000
1808	16,000	1868	110,000
1813	17,000	1873	122,000
1818	19,000	1878	154,000
1823	23,000	1883	199,000
1828	27,000	1888	262,285
1833	31,000	1893	310,704
1838	36,000	1898	441,868
1843	42,000	1903	609,985
1848	52,000	1908	790,238
1853	63,000	1913	1,002,300
1858	78,000	1918	1,395,160

Prices in 1921.

During the past year the copper market has fluctuated within comparatively narrow limits, the extreme prices of spot standard being £75 12s. 6d., reached on 23rd May, and the low level of £65 7s. 6d. touched on 26th October—a difference of only £10 5s. per ton. The following table shows the official average spot price of standard month by month since December, 1920 :—

Monthly Average Price of Standard Copper.

	£	s.	d.
December, 1920 ..	75	16	8
January, 1921 ..	71	1	4
February, 1921 ..	71	0	9
March, 1921 ..	67	13	3
April, 1921 ..	69	8	11
May, 1921 ..	73	5	10
June, 1921 ..	71	18	2
July, 1921 ..	71	4	4
August, 1921 ..	68	12	8
September, 1921 ..	68	0	11
October, 1921 ..	67	8	1
November, 1921 ..	66	13	6

Following the more or less uninterrupted decline during 1920, from the post-war peak of £120 6s. in February, to £75 16s. per ton in December, the market remained fairly steady in the neighbourhood of £71 for the first two months of the past year, but then, early in March, acute weakness was developed on "bear" selling, and the quotation slumped to £65 12s. 6d., or almost the lowest of the year. With the announcement of the closing down of most of the big mines in the United States, the market began to improve, and an upward tendency was followed until towards the close of May standard was selling at over £75 per ton. A factor which contributed considerably to this rise was an attempt by American interests to squeeze the London market. When the attempt was abandoned, the price at once reacted and for the rest

of the year was steadily sliding downwards. For the greater part of the second half of the period there was an absence of confidence in the outlook; professional operators were disinclined to buy, and stocks were gradually mounting up in the warehouses of the United Kingdom.

The comparative steadiness of the market during 1921 was due to a large extent to the almost complete absence of those speculative operations by the public which had been such a feature of dealings on the Metal Exchange in the preceding year. In the ordinary course of events copper receives more attention from the gambling fraternity than, perhaps, any other metal. But, during the period in question, dealings on the Metal Exchange were virtually confined to professional operations and the modicum of buying indulged in by consumers. The close of 1921 finds the quotation for standard copper below the average price for the last complete pre-war year—namely, 1913—when the mean was £68 5s. 9d. The increased cost of production precludes the possibility of copper remaining for any length of time in the neighbourhood of the prices ruling in the years immediately preceding the war. As consumption revives and stocks diminish, so the market will harden and the metal rise until producers can show at least a moderate profit.

Past Fluctuations.

The extreme prices touched in the last complete pre-war year, and since, are recorded in the following table :—

Monthly Average Price of Standard Copper.

	£	s.	d.
December, 1920 ..	75	16	8
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March, 1921 ..	67	13	3
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Past Fluctuations.

The extreme prices touched in the last complete pre-war year, and since, are recorded in the following table :—

	Highest.			*Lowest.*		
	£	s.	d.	£	s.	d.
1913	77	2	6	61	15	0
1914	66	15	0	49	0	0
1915	87	10	0	57	2	6
1916	153	0	0	84	0	0
1917	140	0	0	110	0	0
1918	122	10	0	100	0	0
1919	113	0	0	88	0	0
1920	120	6	3	78	12	6
1921	75	12	6	65	7	6

The highest price recorded for copper during the time for which statistics are available was in 1805, when the red metal realised £198 per ton. The lowest level came a little over 30 years back—in 1889—when the market had a sensational collapse and Chile bars, the then standard brand, were sold at £35 per ton. The debacle at that time was due to the abortive effort of the "Secretan" Syndicate to "corner" the world's supplies. The Syndicate, formed in 1887, obtained control of 80 per cent. of the total production, and, in 1888, forced prices up to £100 per ton. In May of the following year its credit became exhausted, and to the accompaniment of forced selling the market fell to the low level already mentioned. Since then, there have been several smaller attempts to obtain control of the world's supplies, but the "Secretan" episode stands out in importance, and is of particular interest owing to the similarity which present conditions bear to the steps taken on that occasion to assist the market. Complete demoralisation was prevented only by a careful and gradual distribution of the accumulated stocks over the following four years. Thanks largely to a good demand from the electrical industry, the market recovered by August, 1890, to the level of £60 per ton.

Copper and the Electrical Industry.

The electrical industry may again be the making of the copper market. Less than forty years old, it has during the past doubled every five years. At present, there is $1,000,000,000 of new capital needed annually for generating, transmission and distribution equipment by the electric lighting industry of the United States alone. Business in electrical merchandise in that country in 1920 accounted for $2,000,000,000. Statistics recently published by the Electrical Machinery Division of the United States Department of Commerce demonstrated the growth within the last few years of that branch of industry. For the fiscal year, 1914-15, the exports of electrical machinery and appliances from America amounted to $19,700,000; for 1919-20 to $87,000,000; and for 1920-21 to $119,200,000. The actual amount exported during the latter period cannot be gauged by the value, for prices in many instances were less than in the preceding twelve months. Huge hydro-electric schemes have been planned the world over, but are being temporarily held up by the more or less universal trade depression. When the electrical age proper is reached, the consumption of the red metal will be enormous.

Estimate of U.S. Consumption.

An estimate of the current consumption of copper in America by the leading industries of the country was given a short time back in the Boston News Bureau, and is reproduced in the following table. The totals include metal shipped abroad in finished form. The right-hand column gives the actual consumption during 1920.

Consumption of Copper in U.S.A.

Consumption for :	1921 lbs.	1920 lbs.
Electrical manufactures	260,000,000	340,000,000
Telephones and telegraphs ..	85,000,000	100,000,000
Wire not elsewhere reckoned ..	110,000,000	190,000,000
Automotive industries	54,000,000	99,300,000
Railway locomotives and cars ..	14,000,000	17,600,000
Shipbuilding	24,000,000	71,500,000
Buildings	40,000,000	53,400,000
Ammunition	14,000,000	23,400,000
Bearing metal for steam railways ..	40,000,000	45,000,000
Other uses	100,000,000	197,200,000
Exports of copper manufactures ..	64,000,000	64,400,000
TOTALS	805,000,000	1,301,800,000

In shipbuilding, locomotive and car building the consumption of copper is at a low ebb. But with the rolling stock of American railroads in a sad state of repair and with an imperative demand for new equipment it is probable this industry will increase its copper taking.

America's Exports.

Movements of copper from America during the past two years were materially below the normal rate of export. Immediately the illusive post-war boom gave signs of ending users of copper began to restrict their orders and to draw more and more upon their stocks. Eventually, the hand-to-mouth stage was reached, and shipments to most countries of Europe represented for a long time merely the modicum of requirements permitted by the sorely depressed state of industry. In view of the possibility, however, that when trade does revive, European demand will, with due allowance to the changed map of the Continent, bear a close relationship to consumption during the past decade, the following table of American exports from 1910 to 1919 inclusive merits attention.

Exports of Copper from U.S.A.

IN MILLIONS OF POUNDS.

Year	To England (A)		To France (A)		To Germany (A)		To Netherlands (A)		To Italy (A)		Total Exports (A)	
1910	98	6·8	116	8·1	176	12·2	222	15·5	34	2·4	708	49·8
1911	108	7·5	135	9·4	190	13·3	231	16·0	38	2·7	787	55·0
1912	95	6·1	131	8·4	252	16·2	153	9·7	47	3·0	775	49·5
1913	34	2·1	160	9·9	307	19·0	179	11·1	41	2·6	926	52·4
1914	198	12·9	150	9·8	177	11·5	126	8·2	67	4·4	840	54·8
1915	201	12·3	236	14·5	—		4	·2	107	6·6	682	41·8
1916	173	7·7	318	14·1	—		—		98	4·3	784	34·8
1917	373	15·3	366	15·1	—		—		153	6·3	1,126	46·5
1918	252	10·4	265	10·9	—		—		122	5·0	744	30·7
1919	106	5·9	89	5·1	—		—		65	3·7	516	29·3

(*A*) Exports in per cent. of United States production.

In pre-war years Austria-Hungary imported about 35,000,000 lbs. United States copper, and Belgium 7,000,000 lbs. annually.

Sales in 1921.

In all its forms copper was exported from the United States during the first nine months of 1921 to the extent of 441,656,000 pounds, a substantial drop from 1920, but well ahead of the same period of 1919. But for the support received from German buying, shipments would have made no more than a fair showing as compared with the totals of two years ago. That country's consignments, however, aggregated 170,000,000 pounds, or more than double those to France, to which were cleared 68,648,000 pounds. England's requirements of American copper dropped to a minimum, as a result of which she was third at 58,133,000 pounds. Japan came fourth, having taken, up to 1st September, 32,482,000 pounds, as against 82,914,000 a year previously. The drop in copper prices had its effect—$60,495,000 being received for the 441,656,000 pounds shipped, against $90,482,000 paid for the 393,867,000 pounds shipped two years ago.

The next table shows the average monthly exports, in pounds, from the United States to this country, France and Germany in pre-war days, in 1920, and for the first nine months of the past year.

Average Monthly Exports from U.S.A.

To.	Average Monthly Pre-War.	Average Monthly 1920.	Average Monthly to Sept., 1921.
	lbs.	lbs.	lbs.
United Kingdom ..	5,583,000	8,290,000	6,459,000
France	11,530,000	9,874,000	7,628,000
Germany	18,366,000	7,432,000	18,890,000
TOTAL (all Countries) ..	67,266,000	51,968,000	49,073,000

The tabulation clearly demonstrates the importance of German buying to the American copper mining industry.

Figures of copper exported from the United States do not show whether the metal is intended for storage purposes in the warehouses of the Copper Export Association, or will be consumed immediately. The warehouses at such ports as Bremen, Hamburg, Liverpool, Havre, and other European cities are used to facilitate the quick and convenient transport of American copper to interior European points.

The fourth quarter of 1921 found many big consumers in the United States replenishing their stocks. It was reported that more than one large concern covered the whole of its requirements for 1922 on the grounds that the diminution in the visible supply and an anticipated improved demand from Europe would place the Copper Export Association in an advantageous position to force up prices. At any rate, the local absorption, together with the European buying, which the violent fluctuations in exchange rates failed to stop, made very big inroads on the surplus copper on hand. Prominent among the domestic buyers referred to above was the American Brass Company, the largest individual consumer of copper in the world. It purchased 5,000,000 pounds of copper for delivery during October and November. The American Steel and Wire Company also took a very large line. This support for the market by these big corporations had a considerable sentimental effect with smaller users, and, aided by an improvement in the outlook for trade, led to many buying orders being placed. Brass, wire, power and telegraph companies and electrical manufacturers were all in the market for larger amounts of metal than they had purchased earlier in the year.

It was reported that the total sales of copper in the United States for the first ten months of the past year amounted to more than 850,000,000 pounds, including, it was estimated, about 230,000,000 pounds released by the Copper Export Association. If sales during November and December remained at the same level as in October, namely, 140,000,000 pounds, it would give an aggregate for the whole of 1921 of approximately 1,130,000,000 pounds. In any case, it is fairly safe to assume that sales for 1921 will exceed a thousand million pounds.

The Outlook.

Prospects at the commencement of 1922 are brighter than for a long time past. There is still need of caution, however, as much of the recent buying may possibly have been due to consumers laying in stocks in anticipation that prices would soar when it became generally known to what extent the surplus of refined copper had been reduced. Should the market continue to hang fire a number of these purchases may come on the market again.

At 1st January, 1921 the stocks of refined copper in the United States aggregated 650,000,000 pounds. The quantity then in process of refining together with the greatly reduced production for the year brought the total available supply in America for the past twelve months up to approximately 1,659,000,000 pounds. Assuming sales, as previously mentioned, to have been 1,130,000,000 pounds, it would appear that the visible supplies, including some 140,000,000 pounds in process of refining, at the beginning of the year 1922 are little in excess of 530,000,000 pounds. Production at present is rather less than 40,000,000 pounds per month.

Sales in the early part of the last quarter of 1921 were at the rate of 140,000,000 pounds per month. Allowing for some falling off in demand, and putting the purchases at the close of the latter period at no more than 100,000,000 pounds monthly, it will be seen that the surplus was being steadily reduced. During normal times the surplus of crude and refined copper amounts to 400-500,000,000 lbs. It will therefore be realised that the market starts the new year in a sound statistical position, but should buying expand to any appreciable degree there might easily be a sudden shortage of the commodity.

Once the mines recommence operations, it will take about four months for their outputs to become available for consumption. The big producers are finding it a costly matter keeping the mines closed down, and many of them will certainly take advantage of the first favourable opportunity to resume production. The big porphyry may possible resume in the March quarter, while several of the more important properties may be outputting by the middle of the year.

As regards cost of production throughout the United States, the average for 1920 was 15·5 cents per pound, for 1918 15·47 cents., and for 1913 10·5 cents per pound. When operations are again resumed on a large scale, it will probably be found that costs will work out at between 13 and 14 cents per pound for the whole of the country.

A factor which augurs well for the outlook for copper is the number of large programmes recently placed, or else being now planned by the railroads for electrical equipment. In addition, should the motor industry revive, it would create a further big demand for the red metal. The average consumption of copper per car manufactured in America in 1920 was 30 lbs., except in respect of the Ford cars which consumed a mean of 20 pounds. Some of the higher grade machines, however, used as much as 200 pounds.

Speaking at Salt Lake City in the fall of the year, Mr. H. Foster Bain, director of the United States Bureau of Mines, declared that the consumption of metals was continually increasing, and increasing rapidly. The world was using metals faster than it was producing them, and, he added, he could not help but see that the industry was bound to improve.

The price of copper on the London Metal Exchange is influenced very considerably by the fluctuations in the New York rate for sterling. Before the war America was a debtor nation, and the parity of the dollar was 4·87. She has now accumulated virtually all the gold in the universe, and has entirely reversed her position. It is doubtful if the dollar will ever go back to the neighbourhood of the parity mentioned. The more the rate rules under that level, the higher the price of copper will be on this side.

Standard copper will probably vary in price from about £70 to £80 per ton for the first half of 1922, while later, should the trade revival set in in earnest, it may mount to somewhere approaching £90.

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Section XII.

SPELTER.

SPELTER.

THE PROSPECTS IN 1922.

British spelter works which have been closed down for a long period are beginning to resume operations on a small scale. Full activity cannot, however, be expected until there is either a considerable rise in the price of spelter, which is now down to nearly the pre-war figure, or a general and substantial reduction in all the costs of production.

It is not likely that any reductions under the latter head will occur to make the present price profitable, and, therefore, if the demand expands spelter should move up to a figure in the neighbourhood of £35 a ton, around which it may be stabilised for a period.

There is reason to believe that there is a large unsatisfied demand which will assert itself to the benefit of the industry at the first favourable opportunity.

SPELTER.

A Year of Chaos and Stagnation.

Recent conditions in the spelter industry, like those in many other industries, have been without parallel or precedent within living memory. On all sides it is frankly admitted that no one, not even the shrewdest manufacturers, foresaw the extent to which the slump would go, and in consequence few will hazard a forecast of the date of recovery. All the factors which have characterized the general depression—high costs of production, labour troubles, and a severe contraction of demand—have been operative in the case of the spelter industry, but further complications have been produced by the dumping of foreign war stocks at less than the cost of production on the British market. Even at Swansea, the principal centre of manufacture in the United Kingdom, German spelter has been recently imported, a fact which has caused no little concern to local producers whose works, in common with those of practically all similar establishments in the country, have been closed down wholly or partly for a long period.

A Slight Improvement.

In September, 1921, there were signs of a slight recovery. Several works recommenced operations on a small scale, having succeeded in effecting a reduction of wages costs, and being reassured by the long-delayed announcement that the Board of Trade has entered into arrangements in Australia to ship supplies of Broken Hill concentrates to this country in order to enable smelters to restart.

It has been evident for some time that the Board would be forced by circumstances to reconsider the contract entered into with the Australian Government during the War, whereby this country agreed to take for ten years after the War at least 300,000 tons of concentrates annually on a sliding scale, with a minimum of £23 a ton. Steps have been taken to liquidate the contract, and the first instalment of the liquidation process was announced in October, 1921, when the Board of Trade sold 750,000 tons of concentrates and slimes to the Electrolyte Zinc Company, of Australasia, for treatment by the new plant at Risdon, Hobart, Tasmania.

The Board has also disposed of a large quantity of concentrates to Belgian smelters, who look like recovering their former powerful position in the industry.

Average Prices.

The average prices of spelter for the last ten years were as follows :—

	£	s.	d.		£	s.	d.
1911	25	3	2	1912	26	3	4
1913	22	14	3	1914	23	7	0
1915	66	13	10	1916	68	9	6
1917	52	3	6	1918	52	3	11
1919	42	5	2	1920	45	4	6

At one point in 1915 the price reached as much as £115 a ton, and again in the following year it was up to £110. At the Armistice, it was about £50. Since February, 1920, when the average price had advanced to £62 3s. 6d., there was a steady decline to £42 2s. 11d. in June of that year, and £28 11s. 6d. in December.

During 1921, the range of fluctuations was more narrowly restricted, as will be seen from the following prices at the beginning of each month :—

	£	s.	d.		£	s.	d.
January	26	12	6	to	28	0	0
February	24	10	0	,,	25	10	0
March	23	15	0	,,	24	15	0
April	24	5	0	,,	25	15	0
May	25	15	0	,,	27	0	0
June	27	0	0	,,	27	15	0
July	27	2	6	,,	27	12	6
August	25	4	0	,,	26	2	6
September	24	12	6	,,	26	10	0
October	26	7	6	,,	26	17	6
November	25	17	6	,,	26	10	0
December	26	5	0	,,	26	15	0

Stocks in Warehouses.

Stocks in warehouses (including those held by the Ministry of Munitions) have varied from month to month during 1921, as follows :—

January 31st ..	14,862	June 30th ..	18,752
February 28th	13,606	July 31st ..	18,153
March 31st ..	14,427	August 31st	17,387
April 30th ..	17,730	September 30th	16,405
May 31st ..	19,000		

The Cost of Production.

It will be seen from the foregoing that the latest price, in the vicinity of £26 10s., and indeed the general range of prices throughout 1921, are very little more than the average for the four years immediately preceding the War. These prices, of course, are far below the actual cost of production, which has been estimated at about £42. The present price is manifestly unprofitable, and as soon as demand improves there must be either an increase of price to the neighbourhood of £35, or a whole series of reductions in the costs of production. A further fall in the price of coal would make a considerable difference to the prospects, for about three tons of coal are consumed in the manufacture of one ton of spelter.

It is practically certain that there is a large unsatisfied demand, and that under conditions more nearly normal, this demand would manifest itself. Buyers at £64 10s. 0d. a ton were consuming as much as 6,700 tons a week in the first quarter of 1920, this being twice as much as the pre-war weekly consumption. The weekly turnover in October last had fallen as low as 1,325 tons.

Output and Consumption.

The world's consumption of spelter was approximately 1,012,000 metric tons in 1913.

World's Consumption.

	1911	1912.	1913.
	Metric Tons	Metric Tons	Metric Tons
United States	251,600	312,900	313,300
Germany	219,300	225,800	232,000
United Kingdom	175,700	185,200	194,600
France	82,000	82,000	81,100
Belgium	73,700	77,200	76,400
Austria Hungary	43,500	46,800	40,400
Russia	28,900	27,900	33,300
Italy	10,100	10,700	10,900
Spain	4,800	4,700	5,900
Holland	4,000	4,000	4,000
Other Countries	17,800	19,700	20,090
World's Total ..	911,400	996,900	1,011,990

It is uncertain what the actual present requirements are, but as the production in 1920 fell to 698,875 tons, it is apparent that a restoration of the pre-war demand would mean a big fillip to the industry, while a demand such as was experienced in the early months following the Armistice would tax the productive powers of the world's smelters to the limits of their capacity. And this latter demand, it should be emphasised, was a peace and not a war-time phenomenon ; moreover it occurred, as we have shewn, when prices were much higher than they are to-day, and when stocks were considerably heavier.

The Position in America.

The United States remains the largest producer, and also the largest consumer in the industry. In 1913, her output was 308,549 tons, which was practically equivalent to her total consumption in that year. Since the Armistice there has been a falling off in production which, in 1920, was down to 413,000 tons, as compared with a record of 530,000 tons in 1917. Her exports in 1920 totalled 114,300 tons, of which Great Britain took 67,513 tons, and France 24,716. In January, 1921, she had 56,000 retorts operating, as compared with 105,827 a year earlier.

Production in Germany, Belgium, Etc.

Germany is recovering her output slowly, but it is still only about one-third of the pre-war figures, and it may be seriously checked by the partition of Upper Silesia, which yielded 50,000 tons of the 1920 output.

THE WORLD'S PRODUCTION.

	1913.	1919.	1920.
	Tons.	Tons.	Tons.
United States	308,549	433,470	413,000
Germany	277,051	88,722	94,241
Belgium	193,645	15,607	77,245
France	63,412	18,000	19,822
United Kingdom	31,290	21,543	14,766
,, ,, (Refiners)	27,008	7,822	7,585
Holland	23,958	—	2,000
Austria	20,736	4,000	—
Jugo-Slavia	—	—	1,800
Czecho-Slovakia	—	—	4,200
Poland	15,708	2,500	8,000
Spain	8,917	1,500	6,309
Scandinavia	9,600	6,578	14,385
Australia	3,666	2,594	9,665
Japan	—	22,000	8,000
Canada	—	11,160	17,857
World's Total ..	983,540	635,496	698,875

Belgium's recovery is much more rapid, and she is already one of the most formidable competitors in the market, having more than quadrupled her output in less than twelve months.

Canada's production is practically a war-time growth, but her capacity and potentialities are not adequately represented by the output of 17,857 tons in 1920.

The Home Trade.

Shortly after the Armistice, the Ministry of Munitions estimated that the capacity of the increased plants in the United Kingdom should be equal to an output of 140,000 tons, as compared with about 59,000 tons in 1913. How far we are under present conditions from the fulfilment of this expectation may be seen from the output of 1920, which was little more than 22,000 tons. Even if the Ministry's figure were reached in the near future, it would be less than the home consumption in 1913 by about 54,000 tons, the British galvanised trade alone absorbing as much as 70,000 tons of spelter in that year.

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- The Northumberland Coalfield.
- The Durham Coalfield.

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Published by
THE BUSINESS STATISTICS COMPANY, LTD.
BALTIC HOUSE, CARDIFF.

SUPPLEMENTARY STATISTICS.

STATISTICS.

COAL STATISTICS.

PRODUCTION.

000's omitted: in Tons of 2,240 lb.

Year.	Output of World.	OUTPUT OF CHIEF EUROPEAN COUNTRIES.				
		United Kingdom.	Germany.	France.	Belgium.	Austria-Hungary.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1886	403,000	157,518	57,124	19,141	17,008	8,147
1887	430,000	162,120	59,364	20,476	18,084	8,444
1888	465,000	169,935	64,335	21,816	18,909	8,978
1889	474,000	176,917	66,260	23,469	19,551	9,377
1890	503,000	181,614	69,109	25,180	20,039	9,766
1891	524,000	185,479	72,531	25,092	19,360	10,048
1892	529,000	181,787	70,225	25,284	19,268	10,127
1893	515,000	164,326	72,665	24,768	19,098	10,544
1894	539,000	188,277	75,508	26,531	20,204	10,439
1895	568,000	189,661	77,897	27,140	20,121	10,618
1896	592,000	195,361	84,313	28,288	20,910	10,856
1897	631,000	202,130	89,592	29,849	21,147	11,424
1898	664,000	202,055	94,762	31,315	21,733	11,990
1899	723,000	220,095	100,007	31,738	21,717	12,490
1900	768,000	225,181	107,534	32,196	23,086	12,161
1901	789,000	219,047	106,795	31,126	21,856	12,895
1902	803,000	227,095	105,747	28,893	23,493	12,012
1903	881,000	230,334	114,763	33,668	23,415	12,526
1904	887,000	232,428	118,874	32,964	22,395	12,813
1905	940,000	236,129	119,353	34,652	21,506	13,454
1906	1,009,000	251,068	134,914	32,920	23,191	14,475
1907	1,114,000	267,831	140,885	35,411	23,324	14,881
1908	1,065,000	261,529	145,298	36,044	23,179	14,843
1909	1,105,000	263,759	146,306	36,441	22,806	14,836
1910	1,151,000	264,433	150,151	36,963	23,492	14,806
1911	1,174,000	271,892	157,872	37,833	22,712	15,390
1912	1,236,000	260,398	173,932	39,672	22,614	16,600
1913	1,321,000	287,412	188,091	39,413	22,492	17,445
1914	1,116,000	265,643	132,000	23,000	13,000	13,295
1915	1,315,000	253,206	144,092	19,588	13,953	76
1916	1,347,000	256,375	164,316	21,132	18,648	87
1917	1,422,000	248,473	157,921	28,459	14,667	88
1918	1,411,000	227,715	114,583	25,888	15,762	94
1919	1,148,000	229,779	105,122	21,709	18,050	89
1920	1,230,000	229,532	129,433	24,890	23,340	60

The 1920 figures are subject to Correction.

Coal Statistics—*continued.*

PRODUCTION.

000's omitted: in Tons of 2,240 lb.

Year.	OUTPUT OF CHIEF EXTRA-EUROPEAN COUNTRIES.					
	U.S.A. (All Coal.)	Japan.	India.	South Africa.	Austral-asia.	Canada.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1886	101,500	1,374	1,388	19	3,603	1,890
1887	116,652	1,746	1,564	18	3,751	2,169
1888	132,732	2,008	1,709	29	4,179	2,324
1889	126,098	2,421	1,946	49	4,563	2,373
1890	140,867	2,598	2,169	111	4,105	2,754
1891	150,506	3,169	2,329	113	5,048	3,194
1892	160,115	3,177	2,538	179	4,778	2,935
1893	162,815	3,317	2,562	673	4,360	3,378
1894	152,448	4,261	2,824	910	4,866	3,435
1895	172,426	4,767	3,540	1,247	5,017	3,106
1896	171,416	5,020	3,864	1,593	5,348	3,344
1897	178,776	5,188	4,066	1,767	5,862	3,380
1898	196,407	6,696	4,608	2,262	6,316	3,726
1899	226,555	6,669	5,093	2,064	6,425	4,397
1900	240,789	7,371	6,119	870	7,479	5 158
1901	261,875	8,885	6,636	1,465	8,112	5,791
1902	269,277	9,589	7,424	2,179	8,223	6,667
1903	319,068	9,979	7,437	2,911	8,532	7,107
1904	314,122	10,602	8,217	3,260	8,392	7,370
1905	350,821	11,818	8,418	3,837	9,080	7,739
1906	369,783	12,845	9,783	4,304	10,325	8,717
1907	428,896	13,656	11,147	5,232	11,511	9,385
1908	371,288	14,587	12,770	5,088	12,053	9,719
1909	411,431	15,048	11,294	5,428	10,096	9,376
1910	447,102	15,535	12,047	6,616	11,934	11,431
1911	443,054	17,318	12,716	6,822	12,801	10,110
1912	477,199	19,441	14,706	9,197	13,908	12,958
1913	504,525	20,919	15,486	9,824	14,900	13,495
1914	456,733	20,000	15,000	7,680	14,839	12,138
1915	475,545	21,099	17,098	7,802	13,624	11,844
1916	526,862	23,602	17,248	9,427	12,070	12,931
1917	581,560	25,937	17,920	9,773	12,265	14,047
1918	611,925	27,578	20,388	9,302	12,986	13,366
1919	543,721	30,336	21,753	10,099	12,341	13,936
1920	569,854	25,009	18,000	11,181	10,900	15,149

Coal Statistics—*continued.*

EXPORTS OF COAL FROM THE U.S.A. (BITUMINOUS) AND THE U.K.

Year.	U.S.A.	U.K.
	Tons.	Tons.
1903 ..	6,303,000	44,950,000
1904 ..	6,345,000	46,226,000
1905 ..	6,959,000	47,476,000
1906 ..	7,705,000	55,600,000
1907 ..	10,449,000	63,601,000
1908 ..	9,101,000	62,547,000
1909 ..	9,694,000	63,077,000
1910 ..	10,784,000	62,085,000
1911 ..	13,875,000	64,599,000
1912 ..	14,460,000	64,445,000
1913 ..	17,987,000	73,400,000
1914 ..	13,802,000	59,040,000
1915 ..	16,565,000	43,535,000
1916 ..	18,491,000	38,352,000
1917 ..	21,285,000	34,996,000
1918 ..	19,956,000	31,753,000
1919 ..	17,003,000	35,250,000
1920 ..	34,390,000	24,932,000
1921 1st half ..	11,926,000	6,025,000

Coal Statistics—*continued.*

EXPORTS OF COAL, COKE AND PATENT FUEL FROM THE CHIEF PRODUCING COUNTRIES, INCLUDING FOREIGN BUNKERS.

000's omitted. English Tons.

Year.	United Kingdom.	Germany.	France.	Belgium.	U.S.A.	Japan.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Average 1886–1895	37,503	10,989	805	5,338	2,306	1,221
Average 1896–1900	51,040	16,103	880	6,345	5,099	2,466
1901	57,783	18,368	699	6,480	7,383	2,931
1902	60,400	19,512	829	6,677	6,127	2,952
1903	63,805	21,464	944	6.505	8,312	3,442
1904	65,822	22,334	1,188	6,623	8,574	2,889
1905	67,160	22,570	1,828	6,428	9,189	2,516
Average 1901–1905	62,994	20,850	1,100	6,543	7,917	2,946
1906	76,788	24,968	1,425	6,275	9,922	2,402
1907	85,188	26,241	1,206	6,241	13,153	2,922
1908	85,306	27,277	1,143	6,305	11,853	2,863
1909	86,037	29,417	1,236	6,226	12,535	2,844
1910	84,542	31,533	1,279	7,223	13,806	2,794
Average 1906–1910	83,572	27,887	1,458	6,454	12,254	2,765
1911	87,081	35,671	1,634	6,880	17,433	3,041
1912	85,843	41,353	2,332	6,839	18,149	3,440
1913	98,338	45,142	1,714	6,878	22,141	3,840
1914	80,366	33,414	911	—	17,632	3,558
1915	59,401	22,367	200	—	18,095	2,901
Average 1911–1915	82,206	—	1,358	—	18,686	3,356
1916	54,145	20,609	216	—	22,628	—
1917	48,028	18,648	230	—	24,169	2,791
1918	42,930	13,824	1,908	—	25,894	2,180
1919	50,486	8,428	608	4,033	22,435	2,001
1920	42,786	22,258	1,920	2,086	*40,035	2,130
Average 1916–1920	47,675	16,753	976	—	27,032	†2,551

* Excluding Bunkers. † Four Years.
The German figures for 1914-1920 are for Coal only.

SHIPPING STATISTICS.

Year	New Merchant Tonnage Launched *					Total for the World.	Vessels lost by Wrecks, Broken up, etc.
	United Kingdom.	British Colonies.	Germany.	U.S.A.	Japan.		
	Tons.	Tons.	Tons.	Tons.	Tons	Tons.	Tons.
1892	1,109,950	19,792	64,888	62,588	–	1,358,045	650,000
3	836,383	17,089	60,167	27,174	1,132	1,026,741	—
4	1,046,508	6,803	119,702	66,894	3,173	1,323,538	692,000
5	950,967	10,381	87,786	84,877	2,296	1,218,160	700,000
6	1,159,751	11,124	103,295	184,175	7,849	1,567,882	726,000
7	952,486	12,431	139,728	86,838	6,740	1,331,924	712,000
8	1,367,570	25,021	153,147	173,250	11,424	1,893,343	733,000
9	1,416,791	8,464	211,684	224,278	6,775	2,121,738	727,000
1900	1,442,471	9,563	204,731	333,527	4,543	2,304,163	752,000
1	1,524,739	28,134	217,593	433,235	37,208	2,617,539	746,000
2	1,427,558	28,819	213,961	379,174	27,181	2,502,755	740,000
3	1,190,618	34,690	184,494	381,820	34,514	2,145,631	744,000
4	1,205,162	30,965	202,197	238,518	32,969	1,987,935	721,000
5	1,623,168	10,798	255,423	302,827	31,725	2,514,922	725,000
6	1,828,343	26,042	318,230	441,087	42,489	2,919,763	762,000
7	1,607,890	46,443	275,003	474,675	66,254	2,778,088	794,000
8	929,669	34,181	207,777	304,543	59,725	1,833,286	794,000
9	991,066	7,461	128,696	209,604	52,319	1,602,000	868,000
1910	1,143,169	26,343	159,303	331,318	30,215	1,958,000	916,000
11	1,803,844	19,662	255,532	171,569	44,359	1,650,000	863,000
12	1,738,514	34,790	275,317	284,223	57,755	2,902,000	694,000
13	1,932,153	48,339	465,226	276,448	64,664	3,333,000	717,000
14	1,683,553	48,134	387,192	200,762	85,861	2,853,000	1,055,112
15	650,919	22,014	No figures available.	177,460	49,408	1,202,000	No figures available.
16	608,235	31,571		504,247	145,624	1,688,000	
17	1,162,896	94,471		997,919	350,141	2,938,000	
18	1,348,120	279,904		3,033,030	489,924	5,447,000	
19	1,620,442	358,728		4,075,385	611,883	7,145,000	
1920	2,055,624	203,644		2,476,253	456,642	5,426,000	518,505

* Steamers and sailing vessels.

The figures for the World in the years 1915 to 1920 do not include the figure for Germany.

COTTON STATISTICS.

Year.	American Acreage Planted.	American Crop.	Average Price of Middling per pound.
	Acres.	Bales.	d.
1901–2	27,950,000	10,701,000	$4\frac{25}{32}$
1902–3	27,878,000	10,758,000	5·44
1903–4	28,907,000	10,124,000	6·94
1904–5	31,730,000	13,557,000	4·93
1905–6	27,000,000	11,320,000	5·94
1906–7	32,049,000	13,551,000	6·38
1907–8	32,060,000	11,582,000	6·19
1908–9	33,370,000	13,829,000	5·50
1909–10	32,044,000	10,651,000	7·86
1910–11	33,418,000	12,132,000	7·84
1911–12	36,681,000	16,043,000	6·09
1912–13	34,766,000	14,129,000	6·76
1913–14	37,458,000	14,610,000	7·27
1914–15	37,406,000	15,067,000	5·22
1915–16	32,107,000	12,953,000	7·51
1916–17	36,052,000	12,976,000	12·33
1917–18	34,925,000	11,912,000	21·68
1918–19	37,207,000	11,603,000	19·73
1919–20	35,133,000	12,218,000	25·31
1920–21	35,504,000	11,355,000	11·89
1921–22	26,519,000	—	—

Cotton Statistics—*continued.*

EGYPTIAN COTTON CROPS.

SEASON.	CANTARS.	SEASON.	CANTARS.
1864–65 ..	2,139,716	1892–93 ..	5,118,150
1865–66 ..	864,581	1893–94 ..	4,933,666
1866–67 ..	1,127,895	1894–95 ..	4,615,270
1867–68 ..	1,207,402	1895–96 ..	5,275,383
1868–69 ..	1,303,156	1896–97 ..	5,879,750
1869–70 ..	1,362,514	1897–98 ..	6,543,128
1870–71 ..	1,970,717	1898–99 ..	5,589,314
1871–72 ..	2,044,254	1899–1900 ..	6,510,050
1872–73 ..	2,298,942	1900–01 ..	5,427,338
1873–74 ..	2,538,351	1901–02 ..	6,371,643
1874–75 ..	2,106,699	1902–03 ..	5,838,090
1875–76 ..	2,928,498	1903–04 ..	6,508,947
1876–77 ..	2,773,258	1904–05 ..	6,351,879
1877–78 ..	2,593,670	1905–06 ..	5,959,883
1878–79 ..	1,683,749	1906–07 ..	6,949,783
1879–80 ..	1,198,800	1907–08 ..	7,234,669
1880–81 ..	2,776,400	1908–09 ..	6,755,812
1881–82 ..	2,912,073	1909–10 ..	4,986,715
1882–83 ..	2,284,250	1910–11 ..	7,573,537
1883–84 ..	2,694,000	1911–12 ..	7,424,208
1884–85 ..	3,615,750	1912–13 ..	7,532,920
1885–86 ..	2,923,450	1913–14 ..	7,684,172
1886–87 ..	2,931,691	1914–15 ..	6,463,726
1887–88 ..	2,937,000	1915–16 ..	4,726,518
1888–89 ..	2,723,000	1916–17 ..	5,126,199
1889–90 ..	3,183,000	1917–18 ..	6,315,841
1890–91 ..	4,072,500	1918–19 ..	4,820,660
1891–92 ..	4,672,520	1919–20 ..	5,571,632
		1920–21 ..	4,876,500

Cotton Statistics—*continued.*

Table of Cotton Spinning Spindles in the Leading Countries of the World.

Country.	Number of Spinning Spindles.
Great Britain	56,160,738
United States of America	36,478,000
France	9,600,000
Germany	9,400,000
Russia	7,100,000
India	6,763,076
Italy	4,506,294
Japan	4,126,504
Czecho-Slovakia	3,582,772
Spain	1,805,785
China	1,800,000
Belgium	1,548,001
Switzerland	1,530,790
Brazil	1,521,300
Poland	1,161,177
Austria	1,140,000
Canada	1,100,000
Holland	630,160
Sweden	609,985
Portugal	400,000
Finland	239,804

IRON STATISTICS.

PIG IRON PRODUCTION.
IN 000 TONS.

Year.	U.K.	Germany, including Luxemberg.	France.	Belgium.	U.S.A.	Total.
1880	7,749	2,713	1,725	608	3,835	15,630
1	8,144	2,897	1,886	625	4,144	17,696
2	8,587	3,364	2,039	727	4,623	19,340
3	8,529	3,454	2,069	783	4,596	19,431
4	7,812	3,585	1,872	751	4,098	18,118
5	7,415	3,673	1,631	713	4,044	17,476
6	7,010	3,515	1,517	701	5,683	18,426
7	7,560	4,009	1,568	756	6,417	20,310
8	7,999	4,321	1,683	827	6,490	21,220
9	8,323	4,511	1,734	832	7,604	23,004
1890	7,904	4,651	1,962	788	9,203	24,508
1	7,406	4,631	1,897	684	8,280	22,898
2	6,709	4,928	2,057	753	9,157	23,604
3	6,977	4,976	2,003	745	7,126	21,827
4	7,427	5,370	2,070	819	6,657	22,343
5	7,703	5,455	2,004	829	9,446	25,437
6	8,660	6,363	2,340	959	8,623	26,945
7	8,796	6,870	2,484	1,035	9,653	28,838
8	8,610	7,301	2,525	980	11,774	31,190
9	9,421	8,130	2,578	1,025	13,621	34,775
1900	8,960	8,507	2,714	1,019	13,789	34,989
1	7,929	7,867	2,389	764	15,878	34,827
2	8,680	8,518	2,405	1,069	17,821	38,493
3	8,935	10,018	2,841	1,216	18,009	41,019
4	8,694	10,104	3,000	1,283	16,497	39,578
5	9,593	10,988	3,077	1,310	22,992	47,960
6	10,149	12,422	3,314	1,431	25,307	52,589
7	9,924	13,046	3,590	1,428	25,781	53,768
8	9,290	11,814	3,412	1,306	15,936	41,758
9	9,664	12,918	3,632	1,632	25,414	53,260
1910	10,217	14,793	4,032	1,803	27,300	58,145
11	9,719	15,534	4,506	2,106	23,312	55,177
12	8,889	17,552	4,949	2,345	29,383	63,118
13	10,479	19,292	5,311	2,527	30,725	68,334
14	8,924	14,390	—	1,454	23,332	
15	8,793	11,790	—	68	29,916	
16	9,048	13,285	—	128	39,435	
17	9,420	13,142	—	8	36,647	
18	9,072	11,759	—	—	39,052	
19	7,393	—	2,376	247	30,586	
20	8,007	—	3,265	—	36,403	

Iron Statistics—*continued.*

IRON ORE PRODUCTION OF PRINCIPAL COUNTRIES.

Year.	United Kingdom.	Germany.	France.	Spain.	U.S.A.
	Tons.	Tons.	Tons.	Tons.	Tons.
1883	17,383,000	8,757,000	3,298,000	4,526,000	—
4	16,138,000	9,006,000	2,977,000	3,907,000	—
5	15,418,000	9,158,000	2,318,000	3,933,000	—
6	14,110,000	8,486,000	3,286,000	4,167,000	—
7	13,098,000	9,351,000	2,579,000	5,556,000	—
8	14,591,000	10,664,000	2,842,000	4,618,000	—
9	14,546,000	11,002,000	3,070,000	4,854,000	14,518,000
1890	13,781,000	11,223,000	3,472,000	6,055,000	16,036,000
1	12,778,000	10,486,000	3,579,000	5,123,000	14,591,000
2	11,313,000	11,354,000	3,707,000	5,114,000	16,297,000
3	11,203,000	11,274,000	3,517,000	5,419,000	11,588,000
4	12,367,000	12,193,000	3,772,000	5,352,000	11,880,000
5	12,615,000	12,152,000	3,680,000	5,514,000	15,958,000
6	13,701,000	13,934,000	4,062,000	6,763,000	16,005,000
7	13,788,000	15,217,000	4,582,000	7,420,000	17,518,000
8	14,177,000	15,645,000	4,731,000	7,197,000	19,434,000
9	14,461,000	17,701,000	4,986,000	9,398,000	24,683,000
1900	14,028,000	18,659,000	5,448,000	8,676,000	27,553,000
1	12,275,000	16,304,000	4,791,000	7,907,000	28,887,000
2	13,426,000	17,675,000	5,004,000	7,905,000	35,554,000
3	13,716,000	20,890,000	6,220,000	8,304,000	35,019,000
4	13,774,000	21,693,000	7,023,000	7,965,000	27,644,000
5	14,591,000	23,067,000	7,395,000	9,077,000	42,526,000
6	15,500,000	26,305,000	8,481,000	9,449,000	47,750,000
7	15,732,000	27,252,000	10,008,000	9,896,000	51,721,000
8	15,031,000	23,896,000	10,057,000	9,272,000	35,983,000
9	14,804,000	25,104,000	11,890,000	8,786,000	51,155,000
1910	15,226,000	28,231,000	14,606,000	8,657,000	56,890,000
11	15,519,000	29,879,000	16,408,000	8,674,000	43,877,000
12	13,790,000	27,200,000	18,808,000	8,970,000	55,150,000
13	15,997,000	35,941,000	21,918,000	9,861,000	61,980,000
14	14,876,000	25,405,000	—	6,819,000	41,440,000
15	14,235,000	23,850,000	—	5,617,000	55,526,000
16	13,700,000	—	—	5,857,000	75,168,000
17	14,845,000	—	—	5,551,000	75,324,000
18	15,044,000	—	—	—	72,630,000
19	12,254,000	—	—	—	48,812,000

IRON ORE IMPORTED INTO THE UNITED KINGDOM.

From.	1920.	1921 (10 *months.*)
	TONS.	TONS.
Spain	4,138,564	622,644
Sweden	456,135	146,992
Norway	155,087	54,075
Algeria	864,305	354,729
Greece	39,420	32,160
Tunis	314,424	165,919
Other Countries	532,976	189,388
Totals	6,500,919	1,565,907

EXPORTS OF IRON ORE FROM FRANCE.

	TONS.
1913	9,904,843
1914	4,750,989
1915	93,338
1916	73,363
1917	124,498
1918	67,247
1919	1,965,074
1920	4,336,653

Iron Statistics—*continued.*

PIG IRON PRICES. AVERAGE FOR THE YEAR.

Year	United Kingdom.		U.S.A.
	Cleveland No. 3. F.O.B.	West Coast Hematite.	Grey Forge at Philadelphia
	£ s. d.	£ s. d.	Dollars.
1883	1 19 10	2 9 11	19·33
4	1 16 4	2 4 11	17·71
5	1 13 6	2 2 11	15·58
6	1 10 8	2 2 3	16·40
7	1 13 0	2 4 6	17·79
8	1 12 5	2 3 4	16·21
9	1 18 2	2 14 6	15·48
1890	2 7 8	2 18 4	15·82
1	2 0 5	2 9 8	14·52
2	1 18 5	2 8 1	13·54
3	1 14 6	2 5 2	12·73
4	1 15 3	2 4 3	10·73
5	1 15 2	2 5 3	11·49
6	1 17 6	2 8 2	11·09
7	2 0 0	2 8 3	10·48
8	2 0 10	2 12 1	10·23
9	2 13 0	2 8 6	16·60
1900	3 8 1	3 18 9	16·49
1	2 7 2	2 18 7	14·08
2	2 6 10	2 19 6	19·20
3	2 6 6	2 16 8	17·13
4	2 2 10	2 13 5	13·67
5	2 6 6	3 0 5	15·58
6	2 11 3	3 7 6	17·79
7	2 15 9	3 14 4	21·06
8	2 10 5	2 19 8	15·72
9	2 9 0	2 17 11	16·13
1910	2 10 4	3 5 10	15·83
11	2 8 5	3 3 1	14·42
12	2 13 3	3 13 2	15·39
13	3 0 0	3 15 2	15·70
14	2 11 2	3 5 6	13·59*
15	3 0 8	4 15 0	14·01*
16	4 2 10	5 15 0†	20·26*
17	4 17 3	6 7 6†	41·31*
18	5 13 5	6 7 6†	33·25*
19	7 17 9	9 5 0	30·21
1920	11 4 3	13 19 2	43·2

* Foundary No. 2, Chicago.
† Home (controlled) prices.

IRON AND STEEL STATISTICS.

IMPORTS AND EXPORTS OF THE PRINCIPAL PRODUCING COUNTRIES.

IMPORTS.

	United Kingdom.		United States.		France.		Belgium.	
1913* ..	Tons. 185,900		Tons. 20,400		Tons. 12,900		Tons. 68,900	
	1920. Tons.	1921. Tons.	1920. Tons.	1921. Tons.	1920. Tons.	1921. Tons.	1920. Tons.	1921. Tons.
January ..	71,200	157,800	28,700	4,900	34,400	44,200	91,200	120,100
February ..	64,800	153,400	18,700	2,500	75,700	35,400	25,200	
March ..	65,700	156,100	20,900	3,300	85,700	33,900	106,400	
April ..	63,000	102,100	21,900	5,900	103,400	26,100	82,800	95,500
May ..	68,300	81,900	29,200	11,700	71,700	31,700	70,700	
June ..	91,900	84,500	28,400	7,700	66,000	20,700	76,800	
July ..	81,200	103,600	24,000	—	127,900	—	55,400	
August ..	92,600	141,500	33,600	—	98,400	—	43,200	—
September	103,300	—	22,300	—	110,300	—	43,300	—
October ..	128,800	—	28,800	—	95,500	—	45,100	—
November ..	120,900	—	13,300	—	111,200	—	45,800	—
December ..	157,100	—	11,000	—	87,800	—	48,100	—

EXPORTS.

	United Kingdom.		United States.		France.		Belgium.	
1913* ..	Tons. 414,100		Tons. 241,000		Tons. 48,200		Tons. 128,800	
	1920. Tons.	1921. Tons.	1920. Tons.	1921. Tons.	1920. Tons.	1921. Tons.	1920. Tons.	1921. Tons.
January ..	257,000	232,400	327,500	540,200	62,500	89,300	36,600	294,000
February ..	226,400	166,900	305,200	393,300	89,500	125,800	42,100	
March ..	290,000	148,900	422,300	226,200	91,800	122,700	44,900	
April ..	269,500	160,100	389,500	160,100	82,400	117,400	48,300	241,300
May ..	326,200	99,000	398,700	138,100	68,600	96,900	51,600	
June ..	283,400	64,700	378,000	115,200	102,700	109,600	76,400	
July ..	368,500	64,000	393,700	—	94,400	—	85,100	—
August ..	276,100	76,500	393,000	—	81,600	—	100,000	—
September	253,500	—	363,300	—	45,400	—	99,600	—
October ..	274,400	—	429,800	—	44,600	—	91,100	—
November ..	237,800	—	417,800	—	106,200	—	96,400	—
December ..	190,400	—	486,400	—	76,500	—	119,500	—

* Average Monthly.

TIN STATISTICS.

PRODUCTION IN METRIC TONS.

Year.	World.	Federated Malay States.	Rest of British Empire.	Dutch Indies.	China.	Bolivia.	Other Countries.
1913	135,710	50,930	20,330	21,240	8,390	26,760	8,060
1914	128,210	49,820	19,950	20,720	7,120	22,360	8,240
1915	129,450	47,520	21,590	20,420	8,000	21,900	10,020
1916	127,250	44,570	21,820	21,240	7,630	21,330	10,660
1917	133,910	40,470	22,080	20,840	11,800	28,320	10,400
1918	130,670	37,970	21,900	20,200	12,000	28,000	10,600
1919	113,635†	36,935*	15,000†	18,500	7,500‡	27,500*	8,200†
1920	121,872†	34,935*	15,100†	21,000	11,795‡	29,542*	9,500†

* Long tons (official). † Long tons (estimated). ‡ Yunnan exports.

PRICES. G. M. TIN.

Year.	Highest.	Lowest.	Year.	Highest.	Lowest.
	£	£		£	£
1883	98½	82½	1902	137¼	98
4	87	72½	3	141½	111½
5	97	74	4	137	116½
6	103½	91¾	5	166¼	129¾
7	166	100¾	6	215	161
8	168½	75	7	200	115
9	98¼	89	8	147	118
1890	105	93	9	156	123½
1	93¾	89	1910	176¾	143⅜
2	103	89	11	233	169
3	95¼	74	12	233	181¾
4	77½	61	13	232	166½
5	69	59	14	188¼	120
6	61¾	56	15	194	148
7	63½	58½	16	205	161½
8	86	62½	17	309¾	180¾
9	150½	87	18	399	235½
1900	153	108¼	19	344¾	203½
1	140	98	1920	419½	195
			21	210¼	148¼

TIN STATISTICS.

WORLD'S TIN SMELTING CAPACITY.*

	TONS.	TONS.
GREAT BRITAIN—		
Williams, Harvey & Co.	17,000	
Penpoll	5,500	
Cornish Tin Smelting Co.	4,200	
Capper Pass	2,500	
London Tin Smelting Co.	2,000	
Redruth Tin Smelting Co.	1,500	
Thames Metal Co.	1,200	
		33,900
UNITED STATES—		
Williams Harvey Corporation	20,000	
American Smelting & Refining Co.	10,000	
		30,000
SOUTH AMERICA—		
Chile Tin Smelting Co. (Arica)	12,000	
		12,000
AUSTRALIA—		
Mt. Bischoff	3,212	
Woolich Tin Smelting Co.	1,000	
Irvinebank	500	
		4,712
CHINA—		
Kochiu Smelters (about)	7,000	
		7,000
STRAITS SETTLEMENTS—		
Straits Trading Co.	36,000	
Eastern Smelting Co.	17,000	
Chinese (1916)	5,000	
		58,000
DUTCH INDIES—		
Banka & Billiton	16,000	
		16,000
SOUTH AFRICA	1,000	
		1,000
CANADA	800	
		800
Total		163,412

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* *Quin's Metal Handbook.*

TIN STATISTICS.

SUPPLY AND CONSUMPTION OF TIN.*

	Supply	*Consumption.*
December, 1920	4,225	4,811
January, 1921	3,193	3,568
February, ,,	1,961	3,568
March, ,,	2,334	3,470
April, ,,	2,735	3,368
May, ,,	5,391	2,755
June, ,,	3,156	3,970
July, ,,	6,692	3,793
August ,,	5,409	6,224
September, ,,	7,321	5,581
October, ,,	6,903	4,879

STOCKS OF TIN.*

	TONS.
December, 1920	18,479
January, 1921	18,104
February, ,,	16,900
March, ,,	15,764
April, ,,	15,131
June, ,,	16,953
July, ,,	19,852
August, ,,	19,037
September, ,,	20,777
October, ,,	22,891

STRAITS SHIPMENTS.

	1918 TONS.	1919 TONS.	1920 TONS.	1921 TONS.
January	3,825	3,340	3,325	1,161
February	4,252	2,850	5,807	273
March	6,115	2,255	2,670	1,204
April	3,860	1,210	3,917	2,625
May	5,357	1,730	5,071	3,867
June	3,756	1,625	4,161	1,775
July	5,304	7,000	4,260	4,300
August	4,652	9,470	3,457	4,115
September	6,912	5,800	4,313	5,915
October	2,934	5,145	2,935	5,000
November	4,593	3,945	3,235	—
December	4,000	6,675	2,280	—
Sundries	1,000	—	—	—
	56,380	51,045	45,431	—

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* Reported by A. Strauss & Co., Long tons.

TINPLATE STATISTICS.

Year.	Exports from United Kingdom.			Production in United States.	Average Price in New York.
	Tinplates.	Blackplates.	Total.		
	Tons.	Tons.	Tons.	Tons.	Cents per lb.
1892	395,449	Figures	395,449	18,803	4·90
3	379,172	not	379,172	55,182	4·97
4	353,928	available.	353,928	74,260	4·52
5	366,120	34,368	400,488	113,666	3·58
6	266,963	48,405	315,368	160,361	3·36
7	271,230	58,048	329,278	256,598	3·01
8	250,953	58,327	309,280	326,915	2·76
9	256,373	85,729	342,102	360,875	4·08
1900	272,877	66,278	339,155	379,020	4·46
1	271,320	51,395	322,715	399,291	4·02
2	312,206	57,328	369,534	360,000	3·96
3	292,800	65,235	358,035	480,000	3·78
4	359,634	62,529	422,163	458,208	3·48
5	354,864	68,839	423,703	493,500	3·56
6	374,802	65,615	440,417	577,562	3·74
7	405,328	71,531	476,859	514,775	3·93
8	402,869	61,098	463,967	537,087	3·75
9	439,747	60,064	499,811	612,951	3·54
1910	483,020	55,850	538,870	772,770	3·62
11	484,331	67,037	551,368	783,960	3·86
12	481,123	65,720	546,833	962,971	3·67
13	494,123	71,775	565,898	823,719	3·54
14	435,497	57,238	492,735	931,250	3·28
15	368,602	53,492	422,094	1,080,000	3·19
16	321,710	45,000	366,710	1,204,500	5·30
17	177,218	13,463	190,681	1,544,000	9·11
18	223,509	4,571	228,080	1,473,939	7·75
19	289,462	32,511	321,973	1,150,898	7·09
1920	353,017	36,311	389,328	*1,425,000	7·00
21†	143,640	8,196	151,836	—	—

* Estimated. † 1st Nine Months.

MONEY MARKET STATISTICS.

GOLD PRODUCTION.

Year.	Transvaal.	Australasia.	India.	U.S.A.	Total for the World.
	£	£	£	£	£
1887	—	—	—	—	21,765,000
8	—	—	—	—	22,674,000
9	—	—	—	—	25,410,000
1890	—	—	—	—	24,454,000
1	—	—	—	—	26,883,000
2	—	—	—	—	30,207,000
3	—	—	—	—	32,379,000
4	—	—	—	—	37,329,000
5	8,570,000	11,913,000	951,000	9,710,000	41,202,000
6	8,604,000	7,687,000	1,417,000	11,060,000	43,411,000
7	11,654,000	9,644,000	1,484,000	11,951,000	49,059,000
8	16,241,000	11,761,000	1,608,000	13,430,000	59,423,000
9	15,452,000	14,694,000	1,723,000	14,803,000	65,066,000
1900	1,481,000	13,692,000	1,892,000	16,494,000	52,621,000
1	1,097,000	14,186,000	1,931,000	16,389,000	54,428,000
2	7,301,000	14,812,000	1,970,000	16,667,000	61,260,000
3	12,628,000	16,294,000	2,302,000	15,331,000	65,895,000
4	16,029,000	15,941,000	2,366,000	16,764,000	69,818,000
5	20,854,000	15,560,000	2,417,000	18,371,000	75,927,000
6	24,606,000	14,659,000	2,230,000	20,021,000	85,342,000
7	27,401,000	13,511,000	2,134,000	18,570,000	84,825,000
8	29,973,000	13,056,000	2,178,000	19,417,000	88,386,000
9	30,988,000	12,605,000	2,205,000	20,467,000	92,100,000
1910	32,003,000	11,515,000	2,500,000	19,860,000	96,200,000
11	34,991,000	12,613,000	2,181,000	19,840,000	97,500,000
12	38,660,000	11,860,000	2,500,000	18,337,000	99,000,000
13	36,470,000	10,783,000	2,430,000	17,660,000	92,662,000
14	35,588,000	10,250,000	2,452,000	18,165,000	91,061,000
15	38,627,000	9,117,000	2,404,000	20,320,000	96,296,000
16	39,485,000	8,842,000	2,300,000	19,037,000	95,700,000
17	38,306,400	7,115,100	2,211,700	17,218,600	90,000,000
18	35,769,000	5,486,000	2,075,000	14,076,000	77,528,000
19	*8,330,000	*1,074,700	*461,200	*2,829,400	*17,185,650
1920	*8,155,847	*1,064,227	*454,715	*2,476,166	*16,475,584

* In fine gold, owing to fluctuations in value. The value of the Transvaal yield, including estimated premium, was £39,273,000 for 1919, and £69,452,000 for 1920, the latter amount representing practically 50 per cent. of the World's total.

Money Market Statistics—*continued.*

LONDON BANKERS' CLEARINGS.

The return of paid clearing for the week ended November 2nd, issued by the Bankers' Clearing House, compared with that of a year previously, as follows :—

Week ended 2nd November, 1921.		Corresponding week 1920.	Inc. + or — dec.
	£	£	£
Town	674,730,000	681,631,000	— 6,901,000
Metropolitan	30,096,000	38,601,000	— 8,505,000
Country	51,483,000	72,555,000	— 21,072,000
TOTAL	756,309,000	792,787,000	— 36,478,000

Total 30th Dec., 1920, to 2nd Nov., 1921 ..	£29,435,778,000
,, 1st Jan. to 3rd Nov., 1920	£33,189,345,000
DECREASE	£3,753,567,000

Floating Debt Position.

Appended are details of Great Britain's floating debt at the beginning of the last financial year and at the end of October :—

	Mar. 31st, 1921.	Oct. 29th, 1921.	Movement during period.
	£	£	£
Ways and Means advances :—			
By Bank of England	—	51,000,000	+51,000,000
By Public Depart's.	154,489,000	162,758,000	+8,269,000
Treasury Bills outstanding ..	1,120,841,000	1,123,977,000	+3,136,000
Total Floating Debt	1,275,330,000	1,337,735,000	+62,405,000

Money Market Statistics—*continued.*

INDIA TREASURY BILLS.

Appended is a statement of the Indian Treasury Bill position on October 1st, 1921, and six months previously :

	31st March, 1921.	1st October, 1921.
Outstanding with Public ..	Rs.43,73,55,000 ..	Rs.24,66,20,000
In Paper Currency Reserve	61,26,00,000 ..	60,00,00,000
TOTAL	Rs.104,99,55,000 ..	Rs.84,66,20,000

INDIA GOLD STANDARD RESERVE.

Statement showing the form in which the balance of the Reserve was held on the 31st October, 1921 :—

In India	£1
In England—	
Cash at the Bank of England ..	1,074
British Government Securities—Value as on 30th September, 1921	30,528,903
British Government Securities since purchased (cost price)	9,662,357
Total	£40,192,335

Money Market Statistics—*continued.*

TREASURY BILL ALLOTMENTS.

The following table gives details of each week's tenders since the reintroduction of the system in April last :—

DATE.	Offered.	Applied for.	Average rate.		
	£	£	£	s.	d.
April 21 ..	50,000,000	51,930,000	5	19	3·95
,, 28 ..	50,000,000	76,736,000	5	14	5·64
May 5 ..	50,000,000	94,620,000	5	12	11·18
,, 12 ..	45,000,000	93,355,000	5	11	2·81
,, 20 ..	45,000,000	65,565,000	5	14	11·02
,, 27 ..	55,000,000	72,490,000	5	13	1·83
June 3 ..	55,000,000	84,775,000	5	12	1·06
,, 10 ..	40,000,000	83,975,000	5	12	2·28
,, 17	40,000,000	82,670,000	5	10	1·06
,, 24	55,000,000	96,485,000	5	6	8·89
July 1 ..	60,000,000	77,540,000	5	7	3·34
,, 8 ..	55,000,000	117,220,000	5	3	6·64
,, 15 ..	60,000,000	122,740,000	4	19	4·57
,, 22 ..	50,000,000	123,005,000	4	8	3·31
,, 29 ..	60,000,000	99,975,000	4	8	7·82
Aug. 5 ..	50,000,000	77,955,000	4	10	10
,, 12 ..	45,000,000	74,340,000	4	15	3·8
,, 19 ..	45,000,000	78,435,000	4	14	10·62
,, 26 ..	50,000,000	75,145,000	4	13	0·38
Sept. 2 ..	50,000,000	83,540,000	4	7	1·53
,, 9 ..	50,000,000	73,835,000	4	1	6·36
,, 16 ..	45,000,000	71,075,000	4	0	6·33
,, 23 ..	60,000,000	83,985,000	3	19	11·31
,, 30 ..	60,000,000	83,755,000	4	9	2·34
Oct. 7 ..	60,000,000	134,390,000	4	3	0·81
,, 14 ..	60,000,000	127,825,000	3	18	3·13
,, 21 ..	60,000,000	84,160,000	3	13	8·38
,, 28 ..	60,000,000	83,445,000	3	14	5·63
Nov. 4 ..	60,000,000	87,405,000	3	16	2·67
,, 11 ..	45,000,000	78,340,000	3	17	0·43
,, 18 ..	40,000,000	54,365,000	3	17	8·27
,, 25 ..	45,000,000	78,155,000	3	14	2·15

WHEAT STATISTICS.

Year.	CROPS.				AVERAGE PRICE.	
	United Kingdom.	U.S.A.	Russia.	Argentine.	British Wheat. Gazette Prices per quarter.	
	Qrs. (480 lbs.)	Qrs.	Qrs.	Qrs.	s.	d.
1887	9,528,000	57,041,000	33,750,000	4,000,000	32	6
1888	9,311,000	51,983,000	39,638,000 official (incl. Poland)	3,800,000	31	10
1889	9,485,000	61,320,000	25,864,000	3,000,000	29	9
1890	9,499,000	49,909,000	27,235,000	4,100,000	31	11
1891	9,342,000	76,472,000	21,974,000	4,600,000	37	0
1892	7,589,000	64,492,000	38,800,000	6,900,000	30	3
1893	6,335,000	49,516,000	56,448,000	11,000,000	26	4
1894	7,584,000	57,533,000	55,730,000	7,500,000	22	10
1895	4,774,000	58,388,000	51,576,000	5,500,000	23	1
1896	7,285,000	53,460,000	45,693,000	3,100,000	26	2
1897	7,000,000	66,268,000	42,365,000	6,200,000	30	2
1898	9,153,000	84,393,000	57,253,000	13,600,000	34	0
1899	8,407,000	68,413,000	56,550,000	12,700,000	25	8
1900	6,790,000	65,278,000	52,708,000	9,000,000	26	11
1901	6,740,000	93,500,000	53,105,000	6,000,000	26	9
1902	7,284,000	83,700,000	76,000,000	13,000,000	28	1
1903	6,102,000	79,727,000	76,400,000	17,000,000	26	9
1904	4,739,000	66,000,000	82,000,000	19,500,000	28	4
1905	7,541,000	85,000,000	79,000,000	17,500,000	29	8
1906	7,577,000	91,000,000	63,300,000	19,100,000	28	3
1907	7,066,000	79,000,000	63,675,000	24,000,000	30	7
1908	6,750,000	83,000,000	71,000,000	21,400,000	32	1
1909	7,500,000	92,000,000	96,000,000	19,000,000	36	10½
1910	7,000,000	86,000,000	100,000,000	20,500,000	31	8
1911	8,000,000	78,300,000	68,000,000	22,000,000	31	8
1912	7,200,000	90,000,000	89,000,000	24,000,000	34	9
1913	7,100,000	95,000,000	110,000,000	15,000,000	31	8
1914	7,800,000	111,000,000	108,000,000	22,000,000	34	11
1915	9,200,000	125,000,000	?113,000,000	21,000,000	52	10
1916	7,500,000	80,000,000	?74,000,000	10,000,000	59	5
1917	8,000,000	82,000,000	?	27,000,000	75	9
1918	11,500,000	114,000,000	?	27,000,000	72	10
1919	8,600,000	114,000,000	?	27,000,000	72	11
1920	7,000,000	98,000,000	?	23,000,000	80	9
1921	8,500,000	92,600,000	?	23,000,000	—	

Russia includes Asiatic Russia since 1886.
,, ,, Poland till 1891.
,, ,, Caucasia since 1892.

Wheat Statistics—*continued.*

TABLE OF ACREAGES SOWN TO WHEAT IN PRINCIPAL COUNTRIES.
In thousands of Acres (English Acres).

	Average 1915-1919	1920	1921
NORTHERN HEMISPHERE :—			
Russia in Europe	44,280	—	—
,, in Asia	20,686	—	—
France	11,744	12,097	12,909
Italy	11,223	11,289	11,787
Spain	10,226	10,254	10,349
Roumania	—	5,156	5,437
Germany	3,293	3,413	—
Serb-Croat-Sloven State ..	3,380	3,951	?
Hungary	—	2,662	2,606
Bulgaria	2,326	2,130	2,361
United Kingdom	2,330	1,979	?
United States of America	57,872	57,192	56,744
Canada	16,343	18,232	18,737
British India	31,142	29,949	25,722
SOUTHERN HEMISPHERE :—			
Argentina	16,463	15,014	?
Australia	9,635	9,082	9,445

Wheat Statistics—*continued,*

UNITED KINGDOM WHEAT AND FLOUR IMPORTS FROM CHIEF SOURCES OF SUPPLY (Calculating flour as wheat in quarters).

Year.	From India.	From Russia.	From U.S.A. and Canada.	From Australia.	From River Plate.
1895	2,054,000	5,370,000	10,224,000	—	2,660,000
1896	493,000	4,023,000	12,280,000	—	1,149,000
1897	133,000	3,511,000	12,607,000	—	217,000
1898	2,225,000	1,454,000	14,435,000	—	941,000
1899	1,911,000	587,000	14,049,000	—	2,652,000
1900	2,000	1,031,000	13,561,000	—	4,322,000
1901	779,000	593,000	15,557,000	—	1,885,000
1902	2,063,000	1,526,000	10,091,000	—	1,006,000
1903	3,980,000	4,007,000	10,866,000	—	3,294,000
1904	5,946,000	5,490,000	4,310,000	—	5,002,000
1905	5,321,000	5,764,000	3,377,000	—	5,421,000
1906	2,948,000	3,504,000	8,405,000	—	4,474,000
1907	4,263,000	2,543,000	5,084,000	—	5,110,000
1908	686,000	1,088,000	8,606,000	—	7,206,000
1909	3,415,000	4,230,000	10,481,000	—	4,690,000
1910	4,180,000	6,753,000	8,670,000	—	3,560,000
1911	4,719,000	4,233,000	9,082,000	—	3,469,000
1912	6,025,000	2,102,000	12,353,000	—	4,418,000
1913	4,378,000	1,070,000	16,375,000	—	3,514,000
1914	2,500,000	1,680,000	17,350,000	—	1,519,000
1915	3,200,000	168,000	17,000,000	900,000	2,800,000
1916	1,300,000	—	24,000,000	3,000,000	1,000,000
1917	640,000	—	21,000,000	1,000,000	1,600,000
1918	144,000	—	17,500,000	3,000,000	3,400,000
1919	—	—	16,800,000	—	1,500,000
1920	—	—	—		—

TOTAL UNITED KINGDOM IMPORTS (Gross).

Year.	Wheat.	Flour.
1870	7,200,000 qrs.	1,920,000 sacks.
1880	12,900,000 ,,	4,220,000 ,,
1890	14,100,000 ,,	6,300,000 ,,
1900	16,000,000 ,,	8,600,000 ,,
1903	20,500,000 ,,	8,200,000 ,,
1904	22,815,000 ,,	5,889,000 ,,
1905	22,778,000 ,,	4,781,000 ,,
1906	21,692,000 ,,	5,676,000 ,,
1907	22,672,500 ,,	5,318,000 ,,
1908	21,264,400 ,,	5,188,000 ,,
1909	22,832,700 ,,	4,421,000 ,,
1910	24,551,900 ,,	3,984,000 ,,
1911	22,882,000 ,,	4,026,000 ,,
1912	25,566,000 ,,	4,075,000 ,,
1913	24,704,000 ,,	4,791,000 ,,
1914	24,254,000 ,,	4,023,000 ,,
1915	20,700,000 ,,	4,192,000 ,,
1916	23,350,000 ,,	3,984,000 ,,
1917	21,335,000 ,,	5,737,200 ,,
1918	13,540,600 ,,	10,543,900 ,,
1919	16,670,000 ,,	7,084,000 ,,
1920	25,510,400 ,,	4,787,800 ,,

The re-exports are now about 200,000 qrs. of wheat, and average about 300,000 sacks of flour annually.

Wheat Statistics—*continued.*

TOTAL CONSUMPTION BY THE UNITED KINGDOM OF WHEAT AND WHEAT FLOUR.

In thousands of Quarters (000's omitted).

Cereal Year.	Home Crop, of previous harvest less retained for Seed.	Import (Flour reckoned as Wheat), less Re-export.	Total Supply.
1891–1892	8,750	22,000	30,750
1892–1893	7,000	21,000	28,000
1893–1894	5,800	21,000	26,800
1894–1895	7,000	23,500	30,500
1895–1896	4,350	22,000	26,350
1896–1897	6,750	21,000	27,750
1897–1898	6,500	20,500	27,000
1898–1899	8,750	21,750	30,500
1899–1900	7,850	21,500	29,350
1900–1901	6,800	23,000	29,800
1901–1902	6,750	23,250	30,000
1902–1903	6,800	25,000	31,800
1903–1904	5,700	27,000	32,700
1904–1905	4,200	27,000	31,200
1905–1906	7,000	25,750	32,750
1906–1907	7,000	25,750	32,750
1907–1908	6,500	25,500	32,000
1908–1909	6,250	23,500	29,750
1909–1910	7,000	27,100	34,100
1910–1911	6,250	26,000	32,250
1911–1912	7,250	24,800	32,050
1912–1913	6,450	28,650	35,100
1913–1914	6,350	25,750	32,300
1914–1915	7,000	25,500	32,500
1915–1916	8,400	26,500	34,900
1916–1917	6,700	26,500	33,200
1917–1918	7,200	23,500	30,700
1918–1919	10,600	23,000	33,600
1919–1920	8,000	25,000	33,500
1920–1921	6,500	24,200	30,700

OIL STATISTICS.

PRODUCTION OF WORLD'S CHIEF OILFIELDS, 1920 and 1919.

In Tons (round figures).

Country.	1920.	1919.
	Tons.	Tons.
United States	67,695,000	57,667,000
Mexico	24,397,950	13,287,480
Russia	4,580,000	5,234,200
Dutch East Indies ..	2,442,780	2,409,160
British India	1,297,710	1,276,450
Roumania	1,008,350	960,030
Persia	1,130,730	994,100
Galicia	916,030	954,960
Peru	425,950	391,000

WORLD'S PRODUCTION OF CRUDE PETROLEUM FOR PAST THREE YEARS.*

Country.	1918.	1919.	1920.
	Barrels.	Barrels.	Barrels.
United States (*a*) ..	355,927,716	377,719,000	443,402,000
Russia (*b*)	40,456,182	34,284,000	30,000,000
Mexico	63,828,327	87,072,954	159,800,000
Dutch East Indies (*c*) ..	13,284,936	15,780,000	16,000,000
Persia (*b*)	7,200,000	6,289,812	6,604,734
Roumania	8,730,235	6,517,748	7,406,318
Galicia	5,591,620	6,255,000	6,000,000
British India	8,000,000	8,453,800	8,500,000
Trinidad	2,082,068	2,780,000	1,628,637
Peru	2,536,102	2,561,000	2,790,000
Egypt	2,079,750	1,662,184	1,089,213
Argentina	1,321,315	1,504,300	1,366,926
Japan and Formosa ..	2,449,069	2,120,500	2,213,083
France and Germany (*b*)	925,420	925,000	915,340
Venezuela	190,080	321,396	500,000
Canada	304,741	220,000	220,000
Italy	35,953	38,254	38,000
Other Countries ..	20,000	25,000	—
Grand Totals ..	516,801,354	554,505,048	688,474,251

* As per statistics issued by the American Petroleum Institute. The figures for 1920 are subject to revision.

a Marketed. *b* Estimated. *c* Including British Borneo.

Oil Statistics—*continued.*

WORLD'S OUTPUT IN 1919, 1920 AND TO DATE.

Following is the world's production of petroleum for the years 1919 and 1920, and for the period 1857-1920, based on figures compiled by the United States Geological Survey :—

—	1919.	1920.	1857-1920.
	Barrels.	Barrels.	Barrels.
United States ..	377,719,000	443,402,000	5,429,693,000
Mexico ..	87,073,000	163,540,000	536,524,000
Russia ..	25,498,000	25,429,000	1,904,021,000
Dutch E. Indies	15,428,000	17,529,000	219,584,000
India	8,735,000	7,500,000	122,583,000
Roumania ..	6,614,000	7,435,000	165,462,000
Persia	6,412,000	12,353,000	48,070,000
Poland (Galicia)	6,054,000	5,606,000	171,263,000
Peru	2,616,000	2,817,000	29,797,000
Japan	2,175,000	2,140,000	42,810,000
Trinidad ..	1,841,000	2,083,000	11,356,000
Egypt	1,501,000	1,042,000	6,990,000
Argentina ..	1,183,000	1,666,000	7,225,000
Venezuela ..	425,000	457,000	1,335,000
Alsace	344,000	389,000	723,000
Canada	241,000	197,000	24,864,000
Germany ..	234,000	212,000	17,120,000
Italy	35,000	34,000	1,042,000
Algeria ..	5,000	4,000	37,000
England ..	2,000	3,000	5,00
Sarawak ..	*	*	4,052,000
Other Countries	750,000	1,016,000	416,000
Total ..	544,885,000	694,854,000	8,744,972,000

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* According to the last report of the Royal Dutch Company the production from Sarawak amounted to 548,223 barrels in 1919 and 938,678 barrels in 1920.

RUBBER STATISTICS.

WORLD'S OUTPUT.

Year.	Plantation.	Brazil.	Rest.	Total.
	Tons.	Tons.	Tons.	Tons.
1907	1,000	38,000	30,000	69,000
1908	1,800	39,000	24,600	65,400
1909	3,600	42,000	24,000	69,600
1910	8,200	40,800	21,500	70,500
1911	14,419	37,730	23,000	75,149
1912	28,518	42,410	28,000	98,928
1913	47,618	39,370	21,452	108,440
1914	71,380	37,000	12,000	120,380
1915	107,867	37,220	13,615	158,702
1916	152,650	36,500	12,448	201,598
1917	213,070	39,370	13,258	235,698
1918	*200,950	30,700	9,929	241,579
1919	†340,225	34,285	7,350	381,860
1920	304,816	30,790	8,125	343,731

* Amount shipped. †Includes 55,000 tons from 1918.

DISTRIBUTION OF RUBBER DURING 1913-1920 (IN TONS).

	1913	1914	1915	1916	1917	1918	1919	1920
America	46,000	61,249	96,792	116,475	177,088	142,772	236,977	248,791
Great Britain ..	18,640	18,000	15,072	26,760	25,983	30,104	42,520	56,972
Russia	9,000	11,610	10,000	7,500	7,500	2,000	1,500	500
Germany& Austria	18 ,500	13,400	6,000	3,600	3,000	1,000	4,000	9,300
France	6,500	5,000	10,770	14,000	17,000	18,000	22,000	16,606
Italy, etc. ..	2,000	4,000	6,500	9,000	9,000	9,800	14,000	7,000
Scandinavia ..	1,500	2,400	6,568	4,525	5,323	5,000	7,000	7,700
Japan & Australia	1,300	2,400	2,500	4,500	4,500	7,400	12,000	6,000
Canada	2,000	1,700	4,500	4,000	6,287	8,300	9,500	11,300
Belgium ..	3,000	630	—	—	—	—	5,000	3,460
TOTALS ..	108,440	120,380	158,702	189,760	255,675	224,376	354,497	367,629

Rubber Statistics—*continued.*

PRODUCTION AND PRICES.

Year.	World's Production.	+ inc. or — dec.	+ inc. or — dec.	Average Price per lb. Plantation.
	Tons.	Tons.	Per Cent.	s. d.
1906	66,210	+ 4,065	+ 6·5	5 10½
1907	69,000	+ 2,790	+ 4·2	4 11½
1908	65,400	— 3,600	— 5·2	4 2¾
1909	69,600	+ 4,200	+ 6·4	7 1
1910	70,500	+ 900	+ 1·2	8 9
1911	75,149	+ 4,649	+ 6·5	5 5½
1912	98,928	+ 23,779	+31·6	4 9
1913	108,440	+ 9,512	+ 9·6	3 0¼
1914	120,380	+ 11,940	+11·0	2 3½
1915	158,702	+ 38,322	+31·8	2 6
1916	201,598	+ 42,896	+27·0	2 10¼
1917	265,698	+ 64,100	+31·1	2 9¾
1918	241,579	— 42,119	— 9·0	2 3½
1919	381,860	+ 140,281	+58·0	2 1¼
1920	343,730	— 38,130	—10·0	1 11

UNITED KINGDOM RUBBER TRADE.

Year.	Imports.	Exports.	Retained.
	Tons.	Tons.	Tons.
1908	28,753	17,925	10,828
1909	35,003	19,896	15,107
1910	43,848	23,393	20,455
1911	45,297	28,561	16,736
1912	55,023	36,299	18,724
1913	70,287	45,011	25,276
1914	67,623	49,074	18,549
1915	78,592	63,520	15,072
1916	75,218	48,458	26,760
1917	78,420	52,437	25,983
1918	46,904	16,800	30,104
1919	101,891	59,371	42,520
1920	110,878	53,905	56,972

Rubber Statistics—*continued.*

RATIO OF CARS TO POPULATION IN DIFFERENT COUNTRIES.

Country.	One Car to	Country.	One Car to
United States ..	13	Germany	866
Canada	21	Mexico	969
Cuba	91	Italy	985
Great Britain ..	180	Spain	1,380
Sweden	550	Russia	12,000
Belgium	625	Japan	15,000

STATISTICS OF THE AMERICAN MOTOR INDUSTRY,

Year.	Total No. of Cars Registered in U.S.A.	Imports into U.S.A. of Crude Rubber (in tons).	Ratio of Rubber Imported (in tons) per 100 Cars registered.	No. of Pneumatic Tyres Manufactured in U.S.A. (Covers only).
1913	1,255,000	46,000	3·7	6,588,000
1914	1,711,000	61,000	3·6	8,983.000
1915	2,446,000	97,000	4·0	12,840,000
1916	3,513,000	116,000	3·3	18,565,000
1917	4,983,000	177,000	3·5	25,840,000
1918	6,147,000	143,000	2·3	21,000,000
1919	7,559,000	237,000	3·2	35,000,000
1920	9,211,000	249,000	2·7	43,750,000

COPPER STATISTICS.

PRODUCTION.

Year.	Of the World.	Of the United States.	Of Canada	Of Mexico	Of Chili.	Of Spain.	Of Germany.	Of Australia.	Of Japan.
	Metric Tons.	Metric Tons.	Metric Tons.	Metric Tons.	Metric Tons.	Metric Tons.	Metric Tons.	Metric Tons.	Metric Tons.
1890	—	—	3,100	4,400	26,500	52,500	17,900	7,600	15,200
1	283,900	130,200	3,600	5,400	20,200	54,700	16,400	7,600	17,200
2	315,400	155,000	3,600	7,500	22,900	57,400	17,500	6,600	18,200
3	308,400	149,500	5,100	8,700	21,700	54,800	16,400	7,600	18,200
4	329,900	162,300	5,100	12,000	21,700	54,900	17,500	9,100	20,400
5	339,900	175,100	4,100	11,900	22,400	55,800	16,800	10,200	18,700
6	381,300	229,000	3,900	11,400	23,900	54,100	20,400	10,600	20,100
7	410,500	224,000	6,000	13,500	24,900	53,800	20,400	17,800	20,800
8	437,400	238,900	8,100	10,000	23,600	53,200	20,400	16,300	21,100
9	471,800	258,000	6,800	20,000	25,000	53,000	23,800	12,700	25,500
1900	494,200	275,000	8,600	22,000	26,000	53,700	20,700	22,400	25,300
1	528,600	273,000	18,600	37,000	30,600	54,600	22,000	29,500	27,400
2	556,800	299,000	17,800	43,300	26,600	50,600	21,900	25,100	28,300
3	593,200	316,600	19,600	49,000	29,900	50,600	21,500	31,400	33,200
4	661,900	368,600	19,500	77,800	29,100	47,800	21,300	29,800	35,600
5	692,800	395,000	21,600	69,500	29,600	45,500	22,500	35,300	33,700
6	725,300	416,200	25,460	60,625	26,200	50,100	20,700	36,250	42,740
7	725,000	398,800	26,000	57,500	27,100	50,500	20,800	41,900	49,700
8	765,900	430,100	29,000	40,600	38,900	53,400	20,500	40,100	43,700
9	850,500	495,800	24,500	57,200	36,400	53,000	22,800	35,000	47,800
1910	878,100	492,700	26,100	62,500	35,800	51,100	25,100	41,000	46,700
11	886,800	491,600	25,300	61,900	30,100	51,800	22,400	42,500	55,900
12	1,024,100	563,700	35,300	72,000	37,900	59,900	25,600	47,800	66,600
13	1,002,300	548,600	34,400	51,900	39,400	53,800	25,300	46,600	72,000
14	913,200	515,200	33,200	35,400	38,300	47,500	25,000	33,800	68,000
15	1,094,803	646,212	47,202	30,946	52,081	46,200	25,539	32,512	75,415
16	1,408,280	881,237	47,985	55,128	71,430	42,000	24,796	35,000	81,280
17	1,435,721	872,065	50,526	47,503	83,100	42,000	28,362	38,100	111,256
18	1,395,160	848,203	52,693	75,529	85,580	41,000	15,101	33,838	95,800
19	963,646	548,677	36,106	60,491	63,930	40,000	15,775	16,441	81,865
1920	984,483	576,450	35,500	50,480	94,531	25,000	17,255	26,486	65,554
21	—	228,000*	—	—	—	—	—	—	—

* Estimated.

Copper Statistics—*continued.*

PRICES.

Year.	Average London Price. Standard Copper.			Average New York Price. Lake Copper.		
	£	s.	d.	£	s.	d.
1883	62	17	11	73	10	0
4	53	17	6	64	0	0
5	43	11	0	51	10	0
6	40	1	8	51	0	0
7	46	0	6	52	0	0
8	81	11	3	77	0	0
9	49	14	8	63	10	0
1890	54	5	3	72	15	0
1	51	9	4	59	10	0
2	45	13	2	53	0	0
3	43	15	6	49	10	0
4	40	7	4	43	15	0
5	42	19	7	49	10	0
6	46	18	1	50	17	6
7	49	2	6	52	5	0
8	51	16	7	55	7	6
9	73	13	9	82	0	0
1900	73	12	6	76	3	9
1	66	19	8	76	4	8
2	52	11	5	54	16	8
3	58	3	2	61	17	6
4	59	0	6	59	18	1
5	69	12	0	72	8	1
6	87	8	0	90	9	4
7	87	1	8	95	5	9
8	60	0	6	61	18	2
9	58	17	3	61	10	0
1910	57	2	3	60	2	8
11	56	1	9	58	5	4
12	73	1	2	76	7	6
13	68	5	9	72	12	3
14	59	8	11	62	7	6
15	72	6	3	72	0	0
16	116	1	3	116	0	0
17	125	2	5	123	0	0
18	115	11	6	103	18	10
19	90	19	3	83	17	6
1920	90	12	4	111	6	11
1921 (11 months)	69	13	5		—	

SPELTER STATISTICS.

THE WORLD'S PRODUCTION.

Country.	1913.	1919.	1920.
	Tons.	Tons.	Tons.
United States	308,549	433,470	413,000
Germany	277,051	88,722	94,241
Belgium	193,645	15,607	77,245
France	63,412	18,000	19,822
United Kingdom ..	31,290	21,543	14,766
,, ,, (Refiners) ..	27,008	7,822	7,585
Holland	23,958	—	2,000
Austria	20,736	4,000	—
Jugo-Slavia	—	—	1,800
Czecho-Slovakia	—	—	4,200
Poland	15,708	2,500	8,000
Spain	8,917	1,500	6,309
Scandinavia	9,600	6,578	14,385
Australia	3,666	2,594	9,665
Japan	—	22,000	8,000
Canada	—	11,160	17,857
World's Total ..	983,540	635,496	696,875

WORLD'S CONSUMPTION.

Country.	1911.	1912.	1913.
	Metric Tons	Metric Tons	Metric Tons
United States	251,600	312,900	313,300
Germany	219,300	225,800	232,000
United Kingdom ..	175,700	185,200	194,600
France	82,000	82,000	81,100
Belgium	73,700	77,200	76,400
Austria Hungary ..	43,500	46,800	40,400
Russia	28,900	27,900	33,300
Italy	10,100	10,700	10,900
Spain	4,800	4,700	5,900
Holland	4,000	4,000	4,000
Other Countries	17,800	19,700	20,090

Spelter Statistics—*continued.*

EXPORTS OF SPELTER BY COUNTRIES.

Country.	1913.	1919.	1920.
	Tons.	Tons.	Tons.
United States ..	6,949	115,632	114,300
United Kingdom ..	9,496	4,986	—
France	27,619	4,852	8,089
Spain	1,027	6,485	1,571
Sweden	6,426	4,381	1,875
Italy	1,615	8	107
Australia	43	1,838	5,689
India	3,913	—	75
Japan	—	5,582	—
China	893	107	95

IMPORTS OF SPELTER BY COUNTRIES.

Country.	1913.	1919.	1920.
	Tons.	Tons.	Tons.
United Kingdom ..	145,004	94,226	109,367
France	36,175	37,661	31,489
Italy	17,931	18,968	7,022
Sweden	5,921	12,236	5,352
Norway	13,341	30,977	—
India	4,392	3,307	4,404
Canada	7,736	—	—
South Africa (Union)	4,156	2,165	1,301
Japan	10,787	—	—

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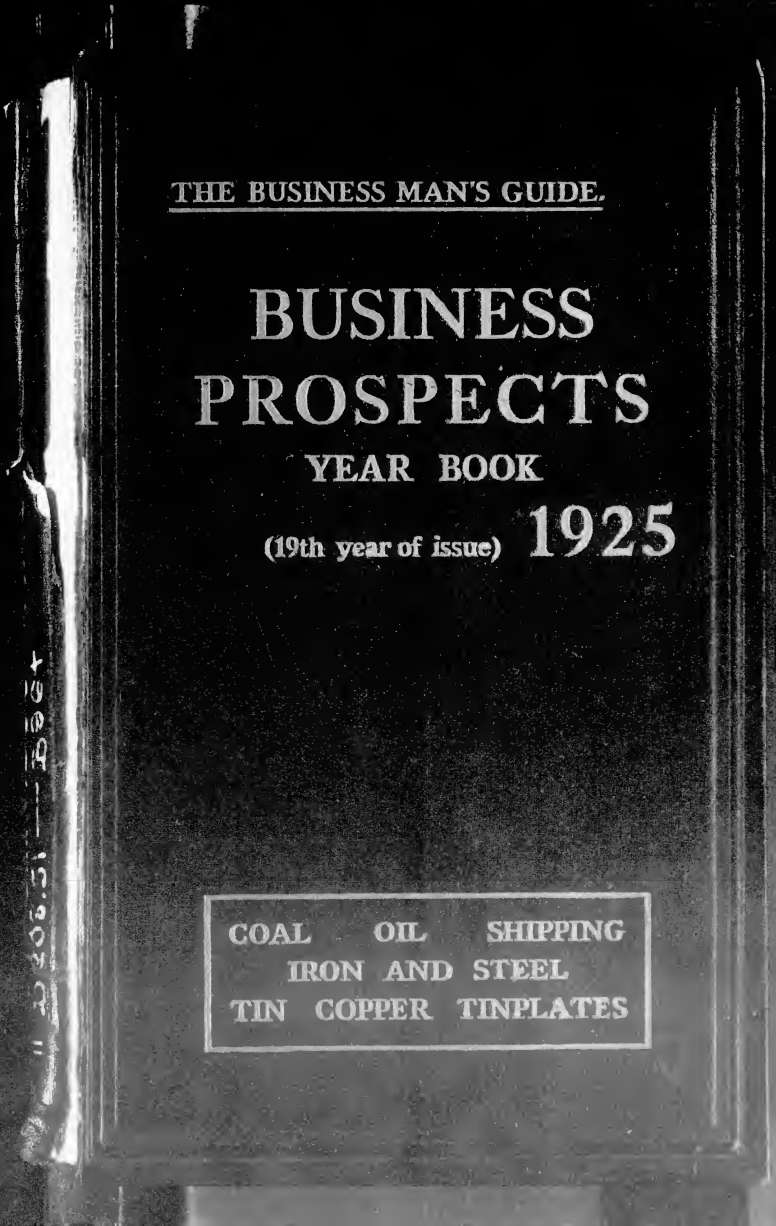

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PREFACE.

The years immediately succeeding the signing of peace were signalised by abnormal industrial activity, abnormally high prices, and abnormal optimism. In the later months of 1920 all came crashing down, and the bankruptcies, ruin and unemployment of 1921 initiated the real process of reconstruction of a world wrecked by the Great War.

During 1922, 1923, and 1924, this process has continued. The movement has, in its geographical distribution and in relation to different industries, varied in its momentum, but as a world movement it has progressed slowly but inevitably forward. 1923 improved on 1922, and an examination of the trade of recent months shows that every country in Europe, with the single exception of Germany, is increasing its production and finding employment for a greater number of its people. Shipping, the principal index of international trade, is finding more employment, and the import and export returns show that international commerce is growing month by month.

It is the confident belief of every financial authority that the Dawes Scheme, carrying, as it has, the removal of the military occupation of Germany, will result in an industrial revival in that country, which, commencing forthwith, will rapidly expand. In Great Britain, though a substantial improvement has been achieved, the conditions still are eminently unsatisfactory, with our ships running on unremunerative freights, our textile workers still on short time, and our two greatest industries, Coal and Steel, struggling with profitless work and insufficient demand.

But, making every allowance for existing difficulties, the outlook is promising. Germany should within a few months have more factories running, more workers employed, and the earning power and spending power of the whole nation raised. More coal will be consumed within her borders, and the tonnage of German coal available for export will be reduced, with the result that the British coal trade will correspondingly benefit. Her competitive power in steel and other manufactures will be increased, but against that will be set the immensely greater demand within her own borders, and the additional imports and oversea transport needed to satisfy it.

In other countries the improvement is regularly advancing. The stabilisation of Exchanges, even at high levels, shows how the world is settling down. New developments in the old countries and the new are in progress, or being urgently pressed for. The prospects are that a world-wide upward movement in trade and industry will continue throughout 1925.

The unique position this country occupies, its unrivalled capacity for producing, and securing access to foreign markets, the unequalled degree of goodwill which its merchants command, and its advantageous position as compared with its great competitors of the pre-war era, assure it a full, if not more than a full, proportion of the trade arising from the growing demand which will make the year 1925 a year of increasing industrial activity.

THE EDITORS.

1*st December*, 1924.

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Section I.

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WHAT ARE THE PROSPECTS OF THE COAL TRADE IN 1925?

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The growth in consumption, accelerated by better conditions in Europe, will by the summer months practically absorb the present coal surplus.

Prices will remain much about their present level, with an improvement by the summer.

COAL.

At the time of writing (October, 1924,) the Coal Industry of the United Kingdom is in a very depressed state. Many collieries—particularly in the coal-exporting areas—have been temporarily closed down owing to lack of business, while at several others there is short or irregular working. Coming so soon after the record export activity of 1923, the present slump is very pronounced. Several reasons have been advanced as responsible for this, including reparations, German and American competition, and high production costs. These are contributory causes, but the real root of the present trouble lies in the fact that the world's consumption of coal is far below normal, and until an expansion in this direction takes place no sustained improvement in the British coal industry can be looked for, unless some abnormal circumstance occurs such as a long coal strike in one of the chief coal producing countries.

During recent years there has been a considerable development in the use of oil on steamers, and in the generation of electricity from water power, but the quantity of energy obtained from these sources is comparatively small in relation to the power obtained from coal, and coal remains the key to the industrial life of the nations of the world.

World's Coal Output.

The world's coal output comes from two main sources, viz. :—

(1) The United States.

(2) Central and Western Europe.

Other countries, such as Australia, India, Japan and South Africa, hold important positions both as producers and exporters of coal, but they exert only a minor influence on the prices of British and Continental coals, as the greater part of their exports are sent to markets where Europe does not compete.

The United States is the largest producer of coal in the world, the output each year being in the region of 500,000,000 tons. So immense, however, are the fuel requirements of the country that only about four to seven per cent. of the output is exported. Canada, West Indies, and North and Central America absorb the greater part of the American coal surplus.

Except in abnormal times, *e.g.*, during the War, the European coal shortage in 1920, and the strike at British collieries in 1921, the shipments of American coal to Europe are too small to have much bearing on the ratio of supply and demand in that area.

For all intents and purposes, therefore, the world's coal position is controlled by Central and Western Europe, where the United Kingdom, Germany, France and Belgium are the chief producers. In 1913 the output of these four countries and the markets in which it was absorbed were as under :—

Production and Consumption in 1913.

PRODUCTION.		CONSUMPTION.	
Country.	*Tons.*	*Country.*	*Tons.*
United Kingdom	287,000,000	United Kingdom	189,000,000
Germany ..	192,000,000	Germany	168,000,000
France	41,000,000	France	61,000,000
Belgium	23,000,000	Belgium	27,000,000
		Austria	13,000,000
		Italy	12,000,000
		Norway, Sweden, and Denmark ..	11,000,000
		Russia	8,0000,00
		Holland	8,000,000
		Spain and Portugal	4,000,000
		Switzerland ..	2,000,000
		Eastern Europe	2,000,000
		Asia and Africa ..	8,000,000
		America	8,000,000
		Bunker supplies (in United Kingdom, France and Belgium)	22,000,000
	543,000,000		543,000,000

It will be noticed that whereas France and Belgium consumed more than they produced, the United Kingdom and Germany had exportable margins. There was this difference, however: Germany sent the greater part of her exports to contiguous countries by rail, river and canal, while the United Kingdom dominated the sea-borne trade.

European Position, 1914-1922.

The years of the Great War, 1914-1918, form a hiatus in ordinary conditions in the coal and other industries. Normal considerations of supply and demand were swept aside, the energies of the greater part of Europe being centred upon the prosecution of the war. After the Armistice a temporary lull came over demand, owing to the cessation of the manufacture of munitions and other war supplies. Both Europe and the United States experienced labour troubles, resulting in curtailment of output. In 1920, therefore, stocks of coal were very low throughout the world, and the demands of consumers, who viewed the shortage with a certain amount of apprehension, made the year one of great activity in the coal export trade. But in 1920, as compared with pre-war years, the productivity of the belligerent countries—with the exception of Belgium—had been considerably reduced. The destruction of the mines in the Nord and Pas de Calais areas had seriously affected the French output, while all the countries were still suffering from the after-effects of the war. The output of Europe was, therefore, much below its requirements, and a coal shortage occurred. The neutral countries in Europe could only to a very small extent add to their already small outputs.

Much of the European coal deficiency was made up by large importation of American coal—13,102,720 tons in 1920 as compared with 4,071,228 tons in 1919. In the autumn of 1920 the shortage was sufficiently relieved as to cause a break in prices, and the next year was one of depressing conditions. After the strike at British Collieries in 1921, the coal industry found itself with prices considerably below those of 1920, and in the following year the German coal shortage and the American strike gave a fillip to the British cola export trade.

European Coal Shortage in 1923.

In the latter part of 1922, the Germans failed to carry out their Reparation obligations, as defined by the Versailles Treaty. The French occupied the Ruhr on the 9th January, 1923, and on the 1st February took control of the disposal of coals mined in that area—cutting off supplies to unoccupied Germany. The Ruhr is the chief coal producing district which Germany now possesses, and the French occupation had a two-fold effect :—

(1) The curtailment of German supplies to France, Belgium and Italy necessitated these countries turning to the United Kingdom for increased coal imports.

(2) Accentuation of German dependence on importation for fuel requirements.

The United Kingdom was the only European country with an exportable coal surplus, and the events in the Ruhr gave the British coal trade a great stimulus, so much so that the British coal exports in 1923 were the highest ever attained.

British Coal Exports.

To.	1921.	1922.	1923
	Tons.	Tons.	Tons.
France	6,395,651	13,579,417	18,826,352
Belgium	618,066	3,489,419	6,504,592
Italy	3,383,083	6,341,743	7,592,735
Germany	817,877	8,345,606	14,806,232
Holland	1,787,678	6,067,789	6,794,346
Total above Countries	13,002,355	37,823,974	54,524,257
All other Countries ..	11,558,197	26,374,410	24,925,421
TOTAL EXPORTS ..	24,660,552	64,198,384	79,449,678

The increased activity which the British Coal Trade enjoyed in 1923 was due entirely to the abnormal Continental demand consequent upon the Ruhr not producing its full quota.

The attitude of "passive resistance" which the Germans adopted in the Ruhr was abandoned in September, and in November an agreement was made whereby production in the Ruhr was resumed.

European Coal Position in 1924.

Whereas the year 1923 is noteworthy for the European coal shortage, the year 1924 is seeing the anti-climax—an oversupply of coal. The reason lies in the fact that the world's demand for fuel is much lower than usual, and this is attributable to the economic and industrial depression which most countries are experiencing. In the iron and steel industries, production in the United States and the chief European countries (United Kingdom, France, Belgium, and Luxembourg) has shown a decline in the summer months :—

	Pig Iron. Tons.		Steel. Tons.
Average Monthly, 1913 ..	4,275,800	..	3,943,300
Do. 1923 ..	4,696,500	..	4,979,700
May, 1924	4,333,400	..	4,418,500
June, ,, ...	3,663,400	..	3,605,200
July, ,, ...	3,444,500	..	3,504,100

In the other industries, also, there is less activity than usual.

Production of coal in Germany is increasing—that for July of this year being 11,273,000 tons as compared with an average monthly production for the first half of the year of 8,583,000 tons. French and Belgian outputs are now in excess of the pre-war rate of production, and show increases over the average monthly figures for 1923. With the supply of coal in Europe in excess of the demand, there is keen competition amongst the coal producing countries, and coal prices have been kept at low figures. Costs of production, therefore, play an important part, and though these are higher than in pre-war years owing to higher wages costs, dearer material, etc., the United Kingdom has been more affected than the Continent in this respect. Germany, France and Belgium are better positioned to market their outputs at the world price. Germany, in particular, with longer working hours and lower wages, can underquote the United Kingdom.

The British coal trade, therefore, is in a state of acute weakness, as not only has the export business fallen off, but inland demand has declined owing to reduced activity in the iron, steel, and other industries.

The delivery of German Reparation Coal is a contributory cause of the depressed state of the British export trade, but the lowness of the world's demand for coal has accentuated the importance of Reparation fuel. The German obligations in regard to Reparation coal and coke amount to 21,000,000 tons per annum, whereas in 1913 Germany exported 34,574,000 tons of coal.

The United States has latent competitive powers. At present the American shipments to Europe are just over 100,000 tons a month. These shipments are small when compared with the aggregate of European consumption, but they nevertheless affect the British Coal Trade, as practically the whole of these shipments are taken by France and Italy.

The position in 1924 can, therefore, be summarised as under :—

(1) World's consumption of coal is below normal.

(2) The supply of coal is more than sufficient to meet the demand.

(3) Germany, with longer working hours and lower wages, is better positioned to dispose of her coal output than the United Kingdom, which is handicapped by shorter working hours, higher wages, and transport costs.

(4) French and Belgian output is in excess of pre-war.

(5) Reparation deliveries to France, Belgium and Italy make these countries less dependent on the United Kingdom to make up their fuel requirements.

(6) The United States, which is already supplying Europe with 100,000 tons a month, is likely to increase her shipments on any increase in the world price.

THE UNITED KINGDOM.

The United Kingdom is the largest producer and also the largest consumer of coal in Europe. Her position in 1913 was :—

	Tons.	Percentage of Output.
Home consumption ..	189,000,000	65·8
Exports (Coal)	73,000,000	25·5
Exports (Coke and Briquettes)	4,000,000	1·4
Bunkers on foreign-going Steamers	21,000,000	7·3
Absorbing her production of	287,000,000	100·0

The exports were chiefly absorbed by Europe, but large shipments were sent to other markets.

	Tons.
Europe	58,414,000
Africa and Asia ..	7,286,000
America	7,091,000
Countries not included above	609,000
	73,400,000

Production and Home Consumption in 1924.

During the first nine months of the current year production from the coal mines in the United Kingdom has shown a falling off of nearly 4,000,000 tons when compared with the first nine months of 1923, the figures being :—

Jan.-Sept., 1923 ..	206,784,000 tons.
Jan.-Sept., 1924 ..	202,916,000 tons.

These outputs were absorbed as under :—

	1923 (Jan.-Sept.) Tons.	1924 (Jan.-Sept.) Tons.
Home consumption ..	130,381,000	139,972,000
Exports (Coal) ..	59,473,000	46,792,000
Exports (Coke) ..	2,681,000	2,106,000
Exports (Patent Fuel)	796,000	826,000
Bunkers on foreign-going Steamers	13,453,000	13,220,000
Absorbing the production of	206,784,000	202,916,000

Home consumption during each quarter of the last three years has been :—

	1922. 000 Tons.	1923. 000 Tons.	1924. 000 Tons.
First Quarter	43,752	46,775	51,039
Second „	38,361	43,082	46,293
Third „	39,294	40,524	42,640
Fourth „	41,987	45,432	—

The costs of production were increased in the early summer of 1924 by alterations to the Wage Agreements with the Miners. This increase is approximately 1/6 to 2/- a ton, and has, in conjunction with the Seven Hour Day, worked only at British Collieries, proved a serious hardship to the industry. Not only are these conditions handicapping our export trade in its competition with other producing countries, but they are having a harmful effect on British Industry generally, especially the Iron and Steel trades, which form one of the largest users of coal in the country. Iron and Steel makers are passing through a depressing time. The high fuel costs have not only reduced the British competitive power in foreign markets, but have enabled foreign markets to undersell in this country.

Costs of production will have to be reduced, and if the miners of the country are guided by the true economic aspect of the position and forsake their political shibboleths, they will realise that the only effective way is to produce a larger quantity of coal per shift. Whereas wages are higher and working hours are less than in pre-war years, the output per man employed has declined. It has been suggested that a reversion to the eight-hour day—as is the case in the Continental coalfields—would provide a solution to the problem. It is computed that such a change would result in a reduction in per ton costs of 2/6 to 3/- and even more at those collieries where wages costs are heavy.

The effect of such a reduction as indicated above would be :—

(1) To provide the British Iron and Steel industry and the other stable trades with fuel at a much cheaper price, and so enable them to meet competition in home and foreign markets.

(2) To enable the United Kingdom to sell its coal abroad at prices which would overcome the competition of the United States in Europe and South America, and of Germany in the Continental markets.

The increased home and foreign demand would have a far reaching effect on the industrial conditions of the country. Not only would the miners benefit by more regular working and more employment, but also those who are in any way connected with the coal industry.

The effect of competition on the British Iron and Steel Industry is seen from the following :—

Iron and Steel and Manufactures Thereof.

	British Imports. Tons.	British Exports. Tons.
Jan.-Sept., 1922	597,000	2,341,000
„ 1923	1,011,000	3,181,000
„ 1924	1,754,000	2,929,000

The number of furnaces in blast in this country has been gradually decreasing, there being 170 at the end of September as compared with 194 at the end of April, and 204 at the end of last December.

With foreign iron and steel makers able to market their products at prices which are considerably below those at which British makers can produce, there does not seem much likelihood of any great improvement in this industry until the world demand shows expansion. When the benefits of the proposed loan to Germany make themselves felt there will be an increase in consumption of iron and steel, and the British Industry will see better days.

With no marked alteration in the other sources of inland demand, it is likely that during the coming year home consumption of coal will show a falling off during the first half as compared with the present year, but will improve in the later months.

Coal Exports.

During the first nine months of 1924, coal exports from the United Kingdom totalled 46,792,000 tons. This compares with the corresponding periods of previous years as under :—

	Tons.
Jan.-Sept., 1913	54,518,000
„ 1922	45,477,000
„ 1923	59,473,000
„ 1924	46,792,000

The chief markets in which these exports were absorbed were :—
First nine months (January—September).

Destination.	1913	1922	1923	1924
	Tons	Tons	Tons	Tons
France	9,567,410	9,660,182	14,117,437	11,176,999
Germany	6,783,574	6,182,086	11,604,643	5,429,759
Italy	7,150,025	4,554,086	5,760,123	5,005,774
Belgium	1,546,634	2,095,931	4,915,042	2,421,005
Holland	1,544,894	4,096,586	4,690,649	2,222,312
Norway, Sweden, and Denmark ..	7,176,916	4,837,348	5,728,465	6,677,537
Spain and Portugal	2,779,629	1,939,024	1,472,962	1,828,065
Egypt	2,259,230	1,287,152	1,253,017	1,358,482
Argentine, Chile, Brazil & Uruguay	5,196,835	2,506,113	3,084,749	3,342,437
Other Countries ..	10,512,641	8,318,065	6,845,855	7,329,726
	54,517,788	45,476,573	59,472,942	46,792,096

Comparing the first nine months of 1924 with the similar period of 1923, the following table shows the increases and decreases in shipments to the chief markets.

Country of Destination.	Increase in 1924.	Decrease in 1924.
	Tons.	Tons.
France	—	2,940,438
Germany	—	6,174,884
Belgium	—	2,494,037
Italy	—	754,349
Holland	—	2,468,337
Norway, Sweden, and Denmark	949,072	—
Spain and Portugal ..	355,103	—
Egypt	105,465	—
Algeria	114,732	—
United States	—	630,489
Canada	—	91,423
South America	257,688	—
*Irish Free State ..	981,300	—
Other Countries ..	109,751	—
	2,873,111	15,553,957

Nett decrease, 12,680,846 tons.

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* The Irish Free State has been classed amongst "Foreign Countries and British Possessions" from the 1st April, 1923.

Thus the decrease in exports in countries affected by the Ruhr—Germany, France, Belgium, Italy, and indirectly Holland, has been mainly responsible for the nett loss of 12,680,846 tons in the coal export trade of the United Kingdom. The shipments to the United States and Canada are also less than last year, but the inclusion of the Irish Free State for the full nine months of 1924 as compared with only six months of 1923, affects the total figure of increases.

GERMANY.

In pre-war years the German coal production was more than sufficient for her own industrial and domestic needs, and large quantities were exported. The position in 1913 was :—

	Tons.
Production	191,511,000
Imports	11,540,000
	203,051,000
Less Home consumption	168,477,000
Exported	34,574,000

The greater part of the exports were sent to contiguous countries—France, Russia, Austria, Switzerland, Belgium, Holland, etc., by rail, canal, and river.

By the Treaty of Versailles, Germany lost some of her coalfields by the

Cession to France of the Lorraine Coalfield.
Cession to France for fifteen years of the Saar Coalfield.
Cession to Poland of the greater part of the Upper Silesian Coalfield (the ceded portion represents approximately 75 per cent. of the output of this Coalfield).

On the basis of the figures for 1913, the ceded coalfields represent :—

Coalfield.	Tons.	Per Cent. of 1913 total German Output.
Lorraine and Saar ..	17,000,000 ..	8·95
Upper Silesia ..	32,000,000 ..	17·2
Total ceded ..	49,000,000 ..	26·15

The curtailment of output in the Ruhr in 1923 had a serious effect on the German production in that year, but with the removal of the impasse, the Ruhr is again producing. The coal output in Germany in July of the current year was 11,273,000 tons as compared with 9,101,000 tons in June. This compares with previous periods as under :—

		Tons.
Monthly average,	1913	11,729,000
,,	1922	9,929,000
,,	1923	5,185,000
,,	1st quarter, 1924	9,779,000
,,	2nd ,,	7,387,000

It will be seen that the July output is not far short of the pre-war average. The labour disputes in May are responsible for the falling off in the second quarter, the output in April being 10,439,000 tons ; in May, 2,621,000 tons ; and in June, 9,101,000 tons. With regular working the German output can reach the annual rate of 130,000,000 tons.

The lignite (brown coal) output is not included in the above figures. Germany's resources in this direction have been extensively exploited since pre-war years, as the following figures indicate :—

Production of Lignite.

		Tons.
Average Monthly,	1913	7,269,000
,,	1922	11,423,000
,,	1923	9,854,000

The output in April of the present year was 10,251,000 tons ; in May, 10,789,000 tons ; in June, 9,034,000 tons ; and in July 9,670,000 tons.

The general economic depression in Germany has hampered an expansion in home requirements, but by reason of her lower production costs Germany is extending her export business.

The working day in the Ruhr mines was increased from seven hours to eight hours at the end of last year, while in the Silesian Coalfield there was an increase from seven-and-a-half hours to eight-and-a-half hours—in both cases the men work extra hours if required. An important point in relation to working costs is that the Continental miners can support themselves on a lower wage rate than the British miners. German coals are now underselling the products of British mines in some of the Continental markets, and, until demand shows a considerable expansion, British coals will have to be sold at lower prices than those now prevailing if markets are to be extended or even maintained.

The deliveries of Reparation fuel to France, Belgium, and Luxembourg during the first half of 1924 have been as under :—

1924.	Coal.	Coke.	Briquettes.	Total in terms of Coal.
	Tons.	Tons.	Tons.	Tons.
January ..	615,041	421,389	89,978	1,266,871
February ..	678,205	464,187	84,364	1,381,485
March	809,476	647,083	76,402	1,748,655
April	937,738	809,508	65,378	2,082,460
May	336,425	400,749	42,035	912,792
June	513,933	616,699	34,415	1,370,613

In spite of the greater outputs from her own mines this year, Germany still imports large quantities of coal, the figures for the first eight months comparing with the two previous years as under :—

German Coal Imports.

From.	Jan.-Aug. 1922.	Jan.-Aug. 1923.	Jan.-Aug. 1924.
	Metric Tons.	Metric Tons.	Metric Tons.
United Kingdom ..	3,794,859	10,886,620	4,335,377
Saar	721,949	103,664	19,678
Czecho-Slovakia ..	96,832	642,509	201,953
Polish Upper Silesia	554,406	6,855,786	4,222,799
Other Countries ..	197,564	333,995	52,366
Total ..	5,365,610	18,822,574	8,832,173

It will be seen that there has been a considerable drop in the imports from the United Kingdom, but the monthly quantity is still about half-a-million tons. Practically all this coal goes to the Western ports of Germany, the cheapness of sea transport is an asset in the British overseas trade in coal and helps to reduce the handicap of higher production costs.

The coal position in Germany can be summarised :—

Home consumption is low owing to the slackness in industry for want of working capital. An improvement in German industrial conditions is noticeable, and when the full effects of the loan to Germany make themselves felt on German industry, inland demand will expand considerably.

Germany, with outputs approaching the pre-war rate, can market her coals at prices which compete with British coals on the Continental markets.

THE FRENCH MARKET.

In pre-war years, France was able to obtain two-thirds of her coal requirements from her own mines ; the other third was obtained by importation—chiefly from the United Kingdom.

In 1913 the French position was :—

	Tons.
Production (less exports) ..	38,000,000
Imports from United Kingdom	13,000,000
,, Germany ..	4,000,000
,, Belgium ..	4,000,000
	59,000,000

The output from the Nord and Pas de Calais areas is now about ninety per cent. of what it was pre-war and is steadily increasing.

Imports from the United Kingdom, during and since the war, have continued at high figures, and in great part have made up the difference between French production and consumption.

Year.	French Coal Output. Tons.	British Exports of Coal to France. Tons.
1913	39,413,000 ..	12,776,000
1914	27,316,000 ..	12,331,000
1915	19,588,000 ..	17,601,000
1916	21,132,000 ..	17,312,000
1917	28,459,000 ..	17,513,000
1918	25,888,000 ..	16,511,000
1919	21,709,000 ..	16,205,000
1920	24,890,000 ..	11,691,000
1921	24,745,000 ..	6,396,000
1922	31,915,000 ..	13,579,000
1923	37,818,000 ..	18,826,000
1924 (eight months)	29,488,000 ..	10,022,000

Since 1919 the French output figures are inclusive of the production of the Lorraine mines.

During the current year there has been an expansion in output, which exceeds that of 1923.

	Metric Tons.
Average Monthly, 1923 ..	3,209,000
January, 1924	3,762,000
February, ,, ...	3,649,000
March, ,, ...	3,773,000
April, ,, ...	3,641,000
May, ,, ...	3,693,000
June, ,, ...	3,496,000
July, ,, ...	3,784,000
August, ,, ...	3,691,000

The French coal position during the first seven months of 1924 has been :—

	Metric Tons.
Production	25,797,000
Imports	15,112,000
	40,909,000
Less Exports	1,184,000
French Consumption ..	39,725,000

During the corresponding periods of 1922 and 1923 the French consumption was 30,086,000 metric tons, and 34,688,000 metric tons respectively. This is indicative of the improved industrial conditions obtaining in France.

Further evidence of the growth of French trade is given by the following figures :—

French Imports and Exports.

(January-August).

	1924. Tons.	Increase over 1923. Tons.
Imports ..	38,008,000 ..	2,657,000
Exports ..	18,553,000 ..	3,064,000

The Iron and Steel industry in France continues active, there being 133 furnaces in blast on 1st September, as against 135 at the beginning of July. There are 37 more furnaces ready to be blown in, while a further 50 are being built or are under repair. The output of both pig iron and steel continues in a healthy condition, the figures for the first seven months being 4,396,000 tons and 3,954,000 tons respectively.

It is likely that French consumption of coal will be maintained at the present annual rate of roughly 66,000,000 tons.

It has been shown above that though the French coal output now exceeds the pre-war rate, it is far from sufficient to satisfy French needs and that importation of large quantities is still necessary. The resumption of Reparations deliveries during 1924 has made France less dependent on British supplies. The following table gives the sources of the French coal imports during the first eight months of this year as compared with similar periods of 1922 and 1923.

French Coal Imports.

	1922 (Jan.-Aug.).	1923 (Jan.-Aug.).	1924 (Jan.-Aug.).
	Metric Tons.	Metric Tons.	Metric Tons.
United Kingdom ..	7,736,353	12,017,014	9,081,896
Belgium-Luxemburg ..	1,598,635	1,577,368	1,212,057
United States	23,255	533,509	246,568
Germany	2,624,140	807,296	2,586,477
Saar	2,292,795	1,628,695	3,436,875
Holland	454,244	461,225	368,284
Other Countries ..	3,694	39,750	42,749
Total	14,733,116	17,064,857	16,974,906

In addition there were large imports of coke of which Germany supplied the greater part.

French Coke Imports.

	1922. (Jan.-Aug.).	1923. (Jan.-Aug.).	1924. (Jan.-Aug.).
	Metric Tons.	Metric Tons.	Metric Tons.
Germany	2,797,797	1,104,232	3,232,800
Belgium-Luxemburg ..	332,898	315,726	272,104
United Kingdom ..	38,345	336,071	52,545
Other Countries ..	130,844	520,498	318,877
Total	3,299,884	2,276,527	3,876,326

France will continue to be the best market for British coals, and, though German competition is strong and American coal is imported, the shipments should be maintained at about a million tons a month.

Though German competition has reduced the proportion of imports from the United Kingdom, and though the United States is sending over supplies, British coals will always find a market, especially at the coast ports, because of the cheaper conveyance cost, which is a set-off to the higher production costs of British coals.

BELGIUM.

Belgium is one of the four chief coal producers of Europe. Her position in 1913 was :—

	Metric Tons.
Production	22,858,000
Imports	10,760,000
	33,618,000
Exports	6,980,000
Home consumption ..	26,638,000

The imports came mainly from

	Tons.
Germany	7,000,000
United Kingdom ..	2,000,000
France	1,000,000

and of her exports nearly 5,000,000 tons were sent to France. Since 1920 the Belgian coal output has been in the region of 22,000,000 tons per annum. During the present year there has been a slight increase, and the average monthly output for the first eight months of 1924 was 1,996,790 tons which compares with previous years as under :—

Jan.-Aug.	Average Monthly Coal Output. Tons.
1913	1,903,460
1921	1,815,564
1922	1,769,514
1923	1,909,660
1924	1,996,790

From 1920 up to the end of 1922 Belgium received substantial quantities of Reparation fuel from Germany, the figures being :—

Year.	Coal (and Coke in terms of Coal). Metric Tons.
1920	1,405,535
1921	2,848,724
1922	2,966,618

These deliveries were interrupted in 1923 when the French entered the Ruhr, and larger demands were made for British coals.

British Coal Exports to Belgium.

	Tons.
1913	2,031,077
1922	3,489,419
1923	6,504,592

When passive resistance collapsed in the Ruhr, deliveries of Reparation fuel were resumed, the quantities received by Belgium since December, 1923, having been :—

	Tons.
1923.	
December	330,002
1924.	
January	343,229
February	408,727
March	531,061
April	511,524
May	136,609
June	344,447
July	442,940
August	414,934
Eight months	3,463,473

The monthly quota, stipulated in the Spa Convention, is 400,000 tons a month, so that with the exception of the first two months of resumed deliveries and of May and June the quota has been exceeded, but on the aggregate for the eight months there was a shortage of 136,527 tons.

Imports of British coals during the present year have fallen off from the high level of the previous year, the total for the first six months being 1,631,840 tons—less than half the quantity imported during the first six months of 1923.

The imports of coal and coke into Belgium during the first eight months of this year were :—

From.	Coal. Metric Tons.	Coke. Metric Tons.
United Kingdom	1,877,792	51,494
France	604,968	61,959
Holland	410,466	174,373
Germany	3,095,192	1,338,017
Other Countries	166	1,141
Total	5,988,584	1,626,984

THE UNITED STATES.

So great is the home consumption of coal in the United States that only a relatively small quantity is exported—the greater part to Canada and the other neighbouring countries. The output of American coal for the first eight months of the last few years has been as under :—

Jan.-Aug.	Bituminous. Nett Tons.	Anthracite. Nett Tons.
1920	359,315,000	60,829,000
1921	266,910,000	61,917,000
1922	238,084,000	23,274,000
1923	367,260,000	68,357,000
1924	294,614,000	60,787,000

The industrial depression has reduced American consumption, and prices have been at low levels. The low prices, however, have helped the export trade.

The American exports of bituminous coals (all coals except Anthracite) during the first seven months of the last three years have been :—

To.	1922. (Jan.-July).	1923. (Jan.-July).	1924. (Jan.-July).
	Tons.	Tons.	Tons.
Canada	3,604,542	8,647,062	6,253,211
Panama, Mexico, Cuba, and West Indies	521,281	584,843	675,167
Brazil	152,133	173,409	498,075
Chili	44,735	14,961	50,745
Argentine	78,971	95,257	150,182
French Africa	27,224	49,176	62,915
Egypt	52,118	10,540	21,809
France	12,012	650,317	308,164
Italy	124,083	375,304	545,579
Rest of Europe	16,364	783,653	46,871
Other Countries	32,733	64,395	147,314
Total	4,666,196	11,448,917	8,760,032

The Canadian demand has been less active owing to reduced industrial requirements. American shipments to Europe have also declined—with the exception of Italy—as Europe now has more coal than can be consumed. The Italian market has been developed and American coals can compete with British and other coals.

From the point of view of the United Kingdom the increase to South America is of interest as this market at one time was almost entirely in British hands. To-day, American shipments are an important factor—especially to Brazil. The exports of British and American coal to Brazil during the first seven months of the present year compare with last year as under :—

From	1923. (Jan.-July).	1924. (Jan.-July).
	Tons.	Tons.
United Kingdom	667,860	513,124
United States	173,409	498,075

In the Argentine, however, the United Kindgom still maintains a preponderating influence.

From	1923. (Jan.-July).	1924. (Jan.-July).
	Tons.	Tons.
United Kingdom	1,493,989	1,844,434
United States	95,257	150,182

At the end of September the price of Pool No. 1 Coal at Hampton Roads was $4·15 to $4·25 a ton. Though freights had slightly hardened during September, the prevailing rates at the end of the month were still low—$3·00 to West Italy and $3·30 to $3·50 to South America. In considering the competitive power of the United States, there are several factors to be taken into account. Whereas the present output is between four and five hundred million tons, this could be increased to seven hundred million tons. The export facilities at American ports can deal with a larger tonnage than is handled, especially as improvements in this direction have been made. In 1920 the American overseas coal shipments totalled 17,837,000 tons, of which 13,103,000 tons went to Europe. Shipments this year to overseas markets, based on the figures for the first seven months, will be between four and five million tons. This is less than a third of the 1920 shipments and could be considerably increased.

SUMMARY.

World's Demand for Coal.

The most important factor bearing on the coal position of the world is that demand is below normal, whereas productive capacity has undergone no material change. There is thus an oversupply of coal, and those producing countries which can market their coals at the cheapest price are securing the business.

Reparations.

A further factor is the delivery of Reparation fuel by Germany. Though these deliveries appear to exert an important influence on the European coal situation, it is chiefly because of their curtailment last year and their resumption during 1924. The effects of Reparation deliveries should not be over emphasised. The German obligations amount to 21,000,000 tons per annum whereas in pre-war years Germany exported more than 34,000,000 tons.

Competition.

With keen competition in the world's markets—particularly Europe—Germany is in a strong position to dispose of her coal abroad. Lower production costs enable her to undersell British coals except in certain markets where the cheapness of sea transport favours the United Kingdom.

American coals are also competing not only in South America but also in Europe, particularly Italy.

United Kingdom.

The home demand for coal has fallen off, as the Iron and Steel industry—one of the largest users of coal—is unable to meet effectively the Continental competition, not only in the foreign markets but also at home. The high price of coal is one of the chief reasons for this depression in the Iron and Steel trades.

Foreign demand has also been adversely affected by the relatively high prices of British coals as compared with those of the Continental coalfields, more especially Germany.

Working costs are heavier than in Germany owing to higher wages and shorter hours and the reduced efficiency of the men employed.

PROSPECTS FOR 1925.

With competition from the United States exerting but a very small influence on the coal equation of Europe, the factors which count are the productive capacity of the four chief Coalfields of Europe and the consumption of their output. On the basis of the figures for the current year the productive capacity of these Coalfields in nearly 50 million tons in excess of the present rate of consumption of their output in Europe and in those countries which use European coal.

The key to the prospects of the coal trade during next year, therefore, lies in the degree of expansion in consumption. Until consumption does expand and considerably reduces this surplus of 50 million tons, no improvement of a sustained nature can be looked for. On the other hand, there are distinct indications that the World's consumption as a whole is growing, and it is expected that one of the results of the recent Loan to Germany will be an expansion in German inland consumption, following on the probable improvement in her economic and industrial conditions.

But the improvement in general demand is likely to be gradual, and it will probably be some months before it grows sufficiently to have an effect on prices.

The prospects for next year are, therefore, that prices will remain at much about their present level for the early months, with an improvement by the summer.

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Section II.

SHIPPING.

SHIPPING.

WHAT WILL BE THE COURSE OF FREIGHTS IN 1925 ?

The World's surplus of *live* tonnage is under 3 per cent. of the total.

The demand for cargo space is overtaking supply, and trade expansion in 1925 should, in the later months, provide remunerative employment for all efficient tonnage.

Freights will move to a higher level as the year advances.

SHIPPING.

Looked at broadly, there are factors in the Shipping position to-day which encourage the belief that after four years of unexampled difficulty and depression, the time is approaching when the World's supply of tonnage will not far exceed the demand for cargo space. Judged by the reduction in the World's laid-up tonnage the prospects of improvement have drawn appreciably nearer during the past twelve months.

Probably the most important factor, in its prospective effect upon Shipping, is the Agreement for putting the Dawes Scheme of Reparations into operation. Shipping will be one of the first to benefit from the expansion of international commerce resultant upon the rehabilitation of German industry. A large part of the loan of £40,000,000 must be spent in the purchase of raw material and semi-manufactures essential to restarting the dormant industries of Germany. This means an increased volume of overseas transport, swelling the demand for tonnage and especially benefiting the cargo-carrying trade.

During the past twelve months the situation from the point of view of surplus tonnage has undergone considerable improvement. The World's idle shipping, which at July 1st, 1923, amounted to 8,045,000 gross tons, had by the end of the year been reduced to 6,888,000 tons, a decrease of 1,157,000 tons or 14 per cent. A further decline of 763,000 tons took place during the first half of 1924, the figure at July 1st being 6,125,000 tons, representing a total decrease in the twelve months of 1,920,000 gross tons or 24 per cent. More than two-thirds or 4¼ million tons of World's idle shipping consists of American tonnage which can largely be disregarded from a competitive standpoint.

Laid-up tonnage in this country at the end of June last amounted to 700,000 tons as against 1,064,000 tons a year earlier. Complete figures are as follows :—

Idle Shipping.

Country.	GROSS TONS. Jan. 1st, 1923.	July 1st, 1923.	Jan. 1st, 1924.	July 1st, 1924.
United States ..	5,328,000	4,575,000	4,271,000	4,265,000
United Kingdom ..	1,010,000	1,064,000	909,000	700,000
France	730,000	725,000	450,000	317,000
Italy	472,000	559,000	427,000	252,000
Netherlands ..	330,000	250,000	235,000	129,000
Norway	53,000	78,000	50,000	23,000
Sweden	22,000	—	—	—
Greece	76,000	94,000	122,000	91,000
Japan	99,000	36,000	29,000	29,000
Belgium	170,000	161,000	86,000	35,000
Denmark	17,000	7,000	13,000	—
Spain	520,000	241,000	128,000	98,000
Australia	106,000	216,000	85,000	87,000
Other Countries ..	195,000	39,000	83,000	99,000
Total ..	9,128,000	8,045,000	6,888,000	6,125,000

The most striking feature about the above figures, and one that points a moral, is that American idle shipping in the twelve months ended June, 1924, has only been reduced by 310,000 tons or 7 per cent., whilst the figures for the whole of Europe show a reduction of 1,534,000 tons or nearly 50 per cent.

By far the greater proportion of the reduction in idle tonnage took place during the second half of 1923, when the expanding trade movement was helped by seasonal demands and the Japanese earthquake. But for one or two spurts the extra employment of tonnage has been accompanied by a very low and unremunerative level of freight rates As will be seen by the following figures outward freights on the whole have been very unfavourable :—

Coal Freights f.o.b. South Wales Ports.

1923.	Rouen.	Bilbao.	Gibraltar.	Genoa.	Port Said.	River Plate.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
July ..	6 4½	7 9	7 1½	9 7½	10 9	15 6
August ..	6 0	8 6	8 0	9 1½	9 9	14 4½
September	6 3	8 9	8 0	10 0	9 4½	13 9
October ..	6 10½	8 0	6 9	9 7½	9 1½	13 10½
November ..	6 10½	—	8 1½	10 1½	10 0	14 3
December ..	6 3	7 6	8 4½	9 3	10 0	13 3

Coal Freights f.o.b. South Wales Ports—*continued.*

1924.	Rouen.	Bilbao.	Gibraltar.	Genoa.	Port Said.	River Plate
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
January ..	6 1½	7 6	8 4½	9 1½	9 7½	12 7½
February ..	5 10½	—	9 1½	11 1½	10 10½	13 9
March ..	6 1½	10 0	9 6	12 4½	13 3	14 10½
April ..	5 7½	9 0	9 4½	11 3	12 9	13 6
May ..	4 9	8 4½	8 4½	10 6	13 1½	13 0
June ..	5 1½	9 0	8 3	11 1½	11 10½	13 3
July ..	4 6	—	8 0	10 1½	10 10½	12 10½
August ..	4 7½	8 4½	7 4½	9 3	10 10½	11 7½
September ..	4 7½	8 9	6 7½	8 9	11 0	12 4½
October ..	4 7½	—	7 10½	9 10½	11 9	13 9

Decrease in World's Tonnage.

The World supply of tonnage at June 30th, 1924, amounted to about 64 million tons, or over one million tons less than a year earlier. This is the first time, except during the war, that a decrease has occurred, and it was mainly due to the very large amount of tonnage broken up.

Comparison of Gross Tonnage owned at June, 1923 and June, 1924.

	Gt. Britain & Ireland.	Other Countries.	Total.
1924.	Tons.	Tons.	Tons.
Steamers and Motor-ships	18,954,158	42,559,982	61,514,140
Sailing Vessels ..	151,680	2,357,747	2,509,427
Total	19,105,838	44,917,729	64,023,567
1923.			
Steamers and Motor-ships	19,115,178	43,220,195	62,335,373
Sailing Vessels ..	116,371	2,664,494	2,830,865
Total	19,281,549	45,884,689	65,166,238

The above table shows that during the last twelve months there has been a decrease in the steam and motor tonnage owned in the World, of 821,233 tons, and a decrease in the sailing tonnage of 321,438 tons, making a total World decrease of 1,142,671 tons.

Germany and Japan are the only two countries which show an appreciable increase, viz., 363,598 tons and 238,560 tons respectively. Decreases have occurred in most countries, the largest being in the United States sea-going tonnage (1,066,491 tons), in France (239,011 tons), and in Italy (201,530 tons).

It should, however, be stated that one-third of the decrease in the United States tonnage is due to the withdrawal from the new Register Book of Government vessels not used for mercantile purposes.

For the purpose of comparison between the relative positions of the various Merchant Marines, Lloyds Register have prepared the following table which omits all vessels other than *Sea-going Steel and Iron Steamers and Motorships* :—

Country.	June, 1914.	June, 1924.	Difference between 1924 and 1914.
	Tons Gross.	Tons Gross.	Tons Gross.
Great Britain and Ireland	18,877,000	18,917,000	+ 40,000
British Dominions ..	1,407,000	2,213,000	+ 806,000
America (Utd. States)	1,837,000	11,823,000	+ 9,986,000
Austria-Hungary ..	1,052,000	Nil.	— 1,052,000
Belgium	341,000	555,000	+ 214,000
Denmark	768,000	974,000	+ 206,000
France	1,918,000	3,193,000	+ 1,275000
Germany	5,098,000	2,856,000	— 2,242,000
Greece	820,000	751,000	— 69,000
Holland	1,471,000	2,533,000	+ 1,062,000
Italy	1,428,000	2,676,000	+ 1,248,000
Japan	1,642,000	3,655,000	+ 2,013,000
Norway	1,923,000	2,326,000	+ 403,000
Spain	883,000	1,163,000	+ 280,000
Sweden	992,000	1,146,000	+ 154,000
Other Countries ..	2,057,000	2,749,000	+ 692,000
Total Abroad	23,637,000	38,613,000	+14,976,000
World's Total ..	42,514,000	57,530,000	+15,016,000

The increase at June, 1923, amounted to 15,425,000 tons, so that during the past twelve months the total of this tonnage has been reduced by over 400,000 tons. Great Britain and Ireland now owns only 40,000 tons more than in 1914, or 160,000 tons less than at June, 1923.

It will be seen that amongst the principal countries, apart from Germany, Greece is the only one which still shows a reduction in the tonnage now owned as compared with 1914.

As pointed out by Lloyds Register the above figures do not take into consideration the question of the efficiency of the various Merchant Navies, as in addition to such factors as size, age, type, and speed of the vessels, other circumstances, which do not lend themselves to a statistical analysis, would have to be taken into account.

It has, therefore, to be borne in mind when comparing the pre-war position with the tonnage in existence to-day, that the basis of calculation is not uniform. Allowance has to be made for the fact that the *efficiency* of the World's shipping ton for ton at the present time is not truly comparable with that afloat 10 years ago.

In 1914 there were 6,392 sailing vessels representing 3,686,000 gross tons ; by 1924 the number had been reduced to 3,932 and the tonnage to 2,509,000 tons. Concurrently steamers and motorships have increased from 24,440 of 45,404,000 tons to 29,024 of 61,544,000 tons. The tendency has thus been to build larger ships. In 1914 there were 3,608 steam and motor vessels of 4,000 tons each and above, whereas to-day, there are 5,916 vessels in this category, of which 338 are of 10,000 tons each and upwards, including 33 of 20,000 tons and over. Of the vessels built prior to 1900 64¾ per cent. are of less than 1,000 tons each, and the average size of the others is 2,602 tons, while of the vessels built during the last five years, less than 33 per cent. are of less than 1,000 tons each, and the average of the others reaches 4,679 tons.

Another important factor which has to be taken into consideration is the question of age. It has been stated that had there been no war, a large percentage of the tonnage 25 years old and over would have been scrapped. The number and tonnage of these vessels are 6,848 of 7,770,000 tons, or 12·6 per cent. of the total.

The group of vessels which form the largest tonnage is that of between 4,000 and 6,000 tons, each amounting to 17,386,000 tons, equal to 28¼ per cent. of the World's total steam and motor tonnage, while the big liners, say those of 15,000 tons each and upwards, only represent 3 per cent. of such total tonnage.

SHIPBUILDING.

Since the September quarter of 1923 a slight but steady improvement in home shipbuilding has set in. The quantity of Merchant Tonnage under construction in Great Britain and Ireland reached its lowest point for fourteen years at September, 1923, when the work actually being proceeded with amounted to slightly over a million tons. By the end of December this figure had increased by over 200,000 tons, of which 80,000 tons represented a reduction in suspended work owing to the settlement of the dispute. At September 30th, 1924, the tonnage was not far short of 1½ million tons and there is no longer any suspended work.

The figures for the past three years are as under :—

Quarter ended		Actual Building. Tons.		Suspended Work. Tons.
December,	1921	1,920,000	..	—
March ..	1922	1,619,000	..	—
June,	,,	1,439,000	..	481,000
September,	,,	1,198,000	..	419,000
December,	,,	1,120,000	..	348,000
March,	1923	1,311,000	..	181,000
June	,,	1,208,000	..	130,000
September,	,,	1,029,000	..	242,000
December,	,,	1,231,000	..	164,000
March,	1924	1,373,000	..	101,000
June,	,,	1,465,000	..	52,000
September,	,,	1,468,000	..	—

At September, 1923, the aggregate tonnage building abroad was roughly the same as our own, but to-day, we are building 31·9 per cent. more than all other nations put together :—

Foreign Construction.

		Actual Building. Tons.		Suspended Work. Tons.
December,	1921	1,417,000	..	400,000
March,	1922	1,118,000	..	325,000
June	,,	1,026,000	..	290,000
September,	,,	829,000	..	256,000
December,	,,	1,270,000	..	216,000

Foreign Construction—*continued.*

		Actual Building. Tons.		Suspended Work. Tons.
March,	1923	1,220,000	..	148,000
June,	,,	1,074,000	..	132,000
September	,,	1,024,000	..	83,000
December,	,,	982,000	..	67,000
March,	1924	925,000	..	118,000
June,	,,	960,000	..	140,000
September,	,,	1,113,000	..	—

The individual position of each country is set out in the following table :—

Country.	December, 1923.	March, 1924.	June, 1924.	September, 1924.
	Tons.	Tons.	Tons.	Tons.
France	110,725	111,610	144,240	137,210
Italy	119,663	130,743	127,772	132,457
Holland	112,811	106,505	96,453	88,643
Norway	33,735	31,470	27,445	29,103
Sweden	43,159	46,675	63,800	69,240
Denmark	62,196	60,846	64,225	73,899
Belgium	5,640	5,940	4,090	7,530
Germany	324,184	287,307	320,254	378,522
Danzig	12,440	11,714	20,495	30,095
Spain	23,065	22,240	18,520	11,300
Portugal	693	693	693	693
United States ..	91,585	119,767	103,665	64,905
Japan	63,207	72,655	66,654	50,059
China	1,850	1,850	1,850	—
British Dominions ..	33,355	27,790	34,925	34,778
Brazil	2,200	2,200	2,200	2,200
Other Countries ..	8,647	2,870	2,870	1,970
Totals ..	1,049,155	1,042,875	1,100,151	1,112,604

During the nine months ended June, 1923, there was a considerable spurt in new tonnage orders, but a lull occurred in the September quarter of that year, to be again succeeded by an expansion in the volume of tonnage laid down. The quantity of tonnage commenced in home yards amounted to 1,099,247 tons, and launches totalled 1,200,828 tons, in the twelve months ended September, 1924. Abroad the figures were 953,954 tons and

762 186 tons respectively. The details for the past three years are given for purposes of comparison :—

Great Britain and Ireland.

		Commenced. Tons.		Launched. Tons.
December,	1921	55,290	..	467,246
March,	1922	51,008	..	335,342
June,	,,	38,877	..	148,886
September,	,,	82,428	..	307,232
December,	,,	231,187	..	260,588
March,	1923	355,203	..	228,371
June,	,,	241,283	..	239,373
September,	,,	111,860	..	66,474
December,	,,	244,506	..	114,583
March,	1924	227,786	..	361,508
June,	,,	375,210	..	364,518
September,	,,	252,745	..	360,219

Abroad.

		Commenced. Tons.		Launched. Tons.
December,	1921	91,094	..	—
March,	1922	67,220	..	188,894
June,	,,	111,945	..	240,874
September,	,,	105,099	..	168,838
December,	,,	113,493	..	477,196
March,	1923	175,418	..	214,151
June,	,,	73,092	..	331,039
September,	,,	* 100,372	..	227,549
December,	,,	228,072	..	217,410
March,	1924	203,820	..	188,738
June,	,,	243,974	..	163,666
September,	,,	278,088	..	192,372

* Does not include Germany.

The total tonnage launched in the world during the year 1923 was 1,643,000 tons. The losses owing to stress of weather amounted to 494,200 tons and the tonnage broken up, condemned, etc., not consequent upon stress of weather, reached 962,500 tons. This gives a total of 1,456,700 tons, leaving a nett addition to shipping in commission during the twelve months of under 200,000 tons. The quarterly additions of new tonnage by launchings during the first nine months of 1924 have been in the region of 550,000 tons, whilst the total losses from all causes for the March quarter amounted to 450,000 tons. No later figures of losses are available, but from those given it is obvious that the nett addition to the World's Mercantile Marine at the present rate of building is very small.

As shown on a previous page there was an actual decrease of over 400,000 tons in the sea-going Steel and Iron Steam tonnage during the twelve months ended June, 1924.

The Annual Report of Lloyds Register of Shipping, recently published, contains the following interesting and authoritative review of the shipbuilding position :—

> "The operations of Lloyd's Register during the twelve months ended 30th June, 1924, continued to be adversely affected by the persistent depression in the Shipbuilding Industry, which has been a prominent feature of the Society's Annual Reports for three years past.
>
> The tonnage of new vessels classed by the Society during the year (July, 1923—June, 1924) constitutes the lowest record over fifteen years (with the exception of the second year of the War), and represents only 55 per cent. of the total for 1922-23 ; only 35 per cent. of that for 1921-22 ; and only 27 per cent. of that for 1920-21.
>
> Whether the bottom of the curve has yet been reached it is impossible to say, but a number of points will necessarily occur to anyone in search of enlightenment upon the subject. Amongst these may be mentioned the fact that during the year ended June last 454 vessels, of 600,595 tons gross, were lost, and some 500 vessels, of about 1,250,000 tons, were dismantled or broken up, the last figure being exactly twice that (625,000 tons) of the vessels dismantled or broken up during the twelve months ended June, 1923.
>
> It is true that, notwithstanding this removal of more than $1\frac{3}{4}$ millions of tons of shipping, the mercantile fleet of the world is even now greater by about 15 millions of tons than it was in 1914, but on the other hand it is well recognised that there is a large proportion of the laid-up tonnage which is unlikely ever to be able successfully to seek for employment.

It has also to be borne in mind that any serious revival in overseas traffic will probably lead to the further elimination of uneconomical tonnage, some of which is still in service.

Shipowners are fully alive to the necessity—in the gradual return to more normal conditions, slow though it has been up to the present time—of providing themselves with up-to-date fleets, and they are aware that shipbuilders, in the circumstances now existing, are prepared to make extraordinary efforts to meet them—so that some of the vacant berths in the shipbuilding yards may be occupied.

Moreover, there were, at the end of June last, 461 vessels, of 1,641,246 tons gross, actually being built throughout the world under the Special Survey of Lloyds Register, with a view to classification in the Society's Register Book. This tonnage shows a considerable increase on the similar figure for June, 1923, but it would be unwise to attach too much importance to the fact, as it appears that, while several orders for passenger liners and vessels for special trades have been placed, few enquiries are being made for cargo vessels of ordinary types."

Prospective Demand for Tonnage.

Attention is drawn at the beginning of this article to the belief that the Dawes Scheme and Loan of £40,000,000 to Germany will have an immediately beneficial effect upon shipping employment and freights. This is undoubtedly the chief " bull " point in the outlook over the ensuing year. Moreover, the mere fact that the question of Reparations has been settled is probably sufficient in itself to give an impetus to European trade. The constantly recurring bugbear of Reparations during the past four years has been the chief obstacle to financial and industrial recovery in Europe, and now that this question has been finally disposed of it seems reasonable to expect a return of confidence and an all round improvement in trade and industry.

From all available data it appears only too clear that the volume of oversea traffic to-day falls a good deal short of what it was in 1913. Comparing the latest available figures of coal exports, our principal heavy traffic, during the first nine months of 1924 we exported 7,726,000 tons or 14·2 per cent. less than in the similar period of 1913 :—

Nine months ended September,	Coal Exports from United Kingdom. Tons.
1924	46,792,000
1923	59,473,000
1922	45,476,000
1913	54,518,000

In other heavy trades, such as iron ore, pig iron, steel and other metals, we find a similar position. The total of the imports and exports of these commodities for this country during the first half of 1924, 1923, and 1913 have been :—

	Tons.
First half, 1924 ..	6,920,000
,, 1923 ..	6,781,000
,, 1913 ..	8,478,000

The above figures show a decrease of 1½ million tons over 1913, or an annual rate of 3,000,000 tons.

Another of the principal bulk cargo trades, our imports of Grain and Flour, whilst showing a considerable increase over the past two years are down by 760,000 tons compared with the first nine months of 1913. The figures are :—

Imports of Grain and Flour.

	Month of September. Tons.	Nine months ending September. Tons.
1924	718,878 ..	7,578,161
1923	811,824 ..	6,289,183
1922	915,815 ..	6,514,203
1913	1,059,231 ..	8,335,497

It will thus be seen that the cargo space required to deal with these three important branches of the inward and outward trades of these islands is considerably below the pre-war level. The figures of shipping tonnage entered and cleared with cargoes show the following result :—

Tonnage Entered and Cleared—with Cargoes.

Great Britain and Northern Ireland.

Nine Months ended Sept.	Entered	Cleared	Total.
	Tons.	Tons.	Tons.
1924	38,136,000	45,438,000	83,574,000
1923	35,947,000	50,894,000	86,841,000
1922	31,711,000	42,285,000	73,996,000
1913	36,430,000	50,383,000	86,813,000

It will be noticed that the tonnage entered is actually in excess of pre-war, but there is a decrease in the total of 3,239,000 tons net register or 3¾ per cent.

SUMMARY.

Notwithstanding laid-up tonnage and the apparent surplusage of merchant shipping in commission, there are certain definite indications that the end of the depression is being reached. Chief of these is the big reduction in shipping unable to find employment, and the fact that the World's net supply of tonnage, instead of increasing, has shown a small decline.

The latest figures available show a further substantial reduction in the quantity of tonnage laid up in this country. The Chamber of Shipping returns give the tonnage laid up at October 1st as 333,820 tons net register as against 470,000 tons at the end of June, a decrease of 136,253 tons or nearly 30 per cent.

The cause of this improvement appears to lie in a considerable increase in our import trade, the tonnage of shipping entered home ports during the past nine months being in excess even of the 1913 figures. Our export trade, as has been shown, is much below what it was last year, coal shipments alone being less by 13,000,000 tons.

At June 30th, 1924, the World's idle shipping amounted to 6,125,000 or 10.6 per cent. of the total, of which more than two-thirds—4,265,000 tons—consisted of American tonnage. It is generally accepted that the major portion of this American tonnage (that controlled by the Shipping Board) is non-efficient, and can be disregarded as a competitive factor. If we eliminate the American idle shipping, therefore, the surplus remaining at the end of June last amounted to only 1,860,000 gross tons.

This country alone has since been responsible for a reduction of 136,253 tons net register, or about 220,000 gross tons, and latest advices from Continental Countries also indicate a diminishing tendency in idle shipping. It is quite clear, therefore, that the surplus live tonnage in the World to-day does not far exceed 1½ million gross tons, or under 3 per cent. of the total. This is a very small margin, and it only needs a moderate expansion in overseas trade to absord the whole of the efficient laid up tonnage into employment. So far as this country is concerned our surplus is now under 2 per cent. of the tonnage owned.

With the definite prospect of stable political and economic conditions the outlook over the remainder of this year and 1925 is distinctly promising. The present depression in the British coal trade is the one disquieting factor, as coal is the mainspring of the industrial situation. If costs of production can be reduced, either through the medium of wages, or longer hours and greater *per capita* output, we shall not only be able to increase exports but the benefit would be reflected in the iron and steel and indeed all industries.

Outside of the satisfactory improvement in the tonnage position, the Reparation settlement should result in re-establishing financial and economic stability in Europe, and in promoting a larger interchange of commodities between country and country. Shipping, as a whole, and the cargo carrying trade in particular, will chiefly benefit from this restoration of commercial and industrial activity.

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Section III.

OIL.

OIL.

WHAT ARE THE PROSPECTS OF THE OIL INDUSTRY IN 1925 ?

The declining tendency of the United States output, in conjunction with the increased seasonal demand, should result in at any rate a temporary recovery in the price of crude.

There will be a further expansion in the use of both heavy oil and petrol. In regard to the latter, owing to the predominance of the small car and economy in the consumption of spirit, the demand will not keep pace with the increase in the number of automobiles.

The feature of the year, from the production standpoint, will be the progress of the industry in Venezuela.

OIL.

PRODUCTION AND PRICES.

Thanks mainly to the bumper yield of the United States, the world's output of crude petroleum in 1923 attained the record figure of slightly over a thousand million barrels. Of this the country just named was responsible for 735,000,000 barrels, representing 72¾ per cent. of the total and a gain of nearly 32 per cent. upon the 1922 yield. As shown elsewhere, a fresh expansion occurred in the United States output during the first half of 1924, but the total for the year is expected not to exceed that of 1923.

As regards the other leading sources of supply, the principal features are the recission of Mexico and the recovery of Russia. Although still retaining a long lead as second on the list, Mexico last year produced no more than 149,472,000 barrels in place of 182,278,000 ; whereas the Russian output of 38,167,000 barrels showed a fresh improvement. Persia continued to go ahead, also Trinidad, while the South American countries made further progress. On the other hand, the Far Eastern production tended to decline. As a whole the yield from fields other than the United States in 1923 fell some 21,000,000 barrels short of the 1922 total. Complete figures for the past three years are given in our Statistical Appendix.

At the beginning of 1923 the marked decline in the weekly output from the United States fields exerted a distinct effect upon quotations, Pennsylvania crude towards the end of January being up to $4, an advance of $1·15 within about a month ; $4·50 was touched shortly afterwards. After that point had been reached a series of " cuts " were made as a result of the fresh expansion in the United States production, and by the end of August the price had come down to $2·95. Reductions of more or less corresponding extent occurred in other varieties, and something like a price war took place in petrol. It is noteworthy, however, that the advance in fuel oils was fairly well maintained—due largely to the increasing use of the

Diesel type of engine. In this connection the amazing performances of the "Mauritania" will be fresh in the mind. There would seem quite a probability that in oil production and prices generally, the near future may witness a repetition of what occurred a year ago.

As mentioned, despite the increase in the first half of the year, the United States production for the whole of 1924 is expected to fall below that of 1923. At the end of September the excess as compared with the corresponding period of 1923, amounted to only 1,400,000 barrels. The production from all other fields will, it is estimated, total 300,000,000 barrels. On this basis the yield for 1924 will approximate very closely to that of 1923—namely, 1,010,995,000 barrels.

During the first seven months of 1924, as compared with the corresponding period of 1923, the consumption of petrol in the United States increased by 16 per cent.; gas and fuel oil by nearly 12 per cent.; lubricants and kerosene by 3 per cent. each. During the first nine months of 1924, the quantity of petroleum products handled by Great Britain exceeded that of the corresponding period of 1923 by nearly 22 per cent.

OIL SHALE POSSIBILITIES.

Mention was made in last year's article of the disposition to look into the possibilities of oil shale as a source of supply. In the meantime the subject has received an increased degree of attention, and in many different quarters.

In Scotland, where the industry has for years past been one of considerable importance, the shale deposits of economic value are now nearly exhausted owing to the enhanced cost of working and the reduced profits from bye-products. In England, torbanite is known to exist, usually associated with coal, and may ultimately become a source of supply. It seems doubtful whether the problem of the elimination of sulphur has yet been solved.

Oil shales are found in many parts of Canada. Those in Manitoba, Saskatchewan and the Maritime Provinces are considered to possess the greatest commercial value. Just recently the deposits of the Athabaska river district have come to the front.

As regards the Tasmanian shales, it is interesting to note that a bulk test was carried out at the Wembley Exhibition: it is officially stated that these resources will be developed on a large scale when a retort with low capitalisation costs and capable of treating large tonnages has been evolved.

Of the several well known deposits in France, the most important are those in the Autumois basin; these may receive attention shortly. Shale exists in Spain, and offers especial possibilities in view of the high tax on petroleum commodities entering the country.

An oil shale industry has for years been carried on in Esthonia. From 10,000 tons in 1918, the output reached over 200,000 tons in 1923. Publicity has been given to the subject in connection with the introduction of British capital. Important deposits in Sweden have so far received only experimental treatment.

The chief oil shale deposits of the United States cover two great fields: the Eastern, within the States of Indiana, Ohio and Kentucky; the Western, within the States of Colorado, Utah and Wyoming. There are in addition other local fields. It is significant that some of the leading oil companies have acquired holdings of considerable magnitude.

Much research work is now proceeding with a view to the evolution of a suitable treatment method with low costs. Until this has been accomplished, shale oil cannot, as a rule, compete with well petroleum.

EUROPE.

Belgium, Czecho-Slovakia, France.

The imports of petroleum and its products into Belgium during 1923 totalled 312,606,600 kilos, about one-third consisting of motor spirit and one-third lamp oil. The exports amounted to only 19,730,600 kilos.

Mineral oil imports into Czecho-Slovakia for 1923 amounted to 138,870 metric tons, as compared with 78,930 metric tons for the preceding year. Of this Poland provided 98,760 tons, or more than 20,000 tons increase over 1922. The addition consisted principally of refined oils.

The Pechelbronn (Alsace) output for the first half of 1924 totalled 36,400 tons, as against 31,390 tons in the corresponding period of 1923.

The latest item of news in connection with the petroleum industry in France is that oil of a petrolific nature has been encountered by a bore at Babian, in the Drome Department. The work was undertaken by the Government. Last year's output amounted to something over 500,000 barrels.

Germany and Italy.

Developments in Germany suggest the possibility that that country may be able in the future to supply quite an appreciable proportion of its home requirements. An inspection by engineering experts, on behalf of the owners, showed the yield of the newly discovered deep bore oil well in the Celle district of Hanover to be no less than 300 tons per day. This is the first deep shaft attempted. Hitherto the total yield of the shallow bores in Hanover has been 45,000 tons a year. Needless to say, this totally unexpected result has stimulated the hope that petroleum may be found in large quantities in other parts. Steps are being taken to test the point.

Germany's home production of crude oil in 1923 was 50,000 metric tons. Domestic production is practically all refined for its lubricants, the petrol content being extremely low in crude oil from local wells. The imports during 1923 totalled 483,300 metric tons. Of this, 298,200 tons, or 61·7 per cent., came from the United States. By increasing her oil exports to Germany in the first half of 1924 the United States furnished that country with 65 per cent. of the total import, or 207,833 tons, as against 61 per cent. in the first half of 1923, and 60 per cent. in the corresponding period of 1922, according to the American Department of Commerce.

In the first half of 1924 Germany imported 319,300 metric tons of lubricating oils, gas oil, light petroleum products, kerosene, heavy petrol, crude petrol and crude oil, in that order of quantitative importance, against 264,255 tons in the corresponding period of 1923, and 351,052 tons in the first six months of 1922. An increase of 21 per cent. above the volume of imports for the first half of 1923 is indicated.

Notwithstanding the expensive failures of the recent past, fresh and energetic efforts are being made to discover payable deposits of petroleum in Italy. Last year's imports amounted to 540,000 tons; the home output was only 32,000 barrels.

Poland.

In Poland a slight extension of the drilling programme resulted in a moderate increase in the yield of oil, the total for 1923 being 737,180 metric tons, as against 712,430 in 1922, and 1,113,670 in 1913. The quantity of oil refined, however, fell off somewhat, due to the fact that in 1922 there were accumulated stocks to work upon. In connection with the proposed legislation relative to the prohibition of the export of crude oil, it may be noted that for several years past the authorities have only granted permits in special cases. The tax has been increased.

Roumania.

Last year witnessed an enormous increase in drilling activity in Roumania, partly as an outcome of the introduction of additional British capital. Some 120,000 metres were drilled, as against 84,050 in 1922, and only 42,100 in 1921. At the end of 1923 there were 907 producing wells and 501 being drilled, nearly all in the district of Prahova, as against 777 producing and 410 in drilling in 1922. During 1923 the supply of electric power was more regular than in previous years, for in May the new electric power station at Floresti began to work and satisfied all requirements.

The production of crude oil in 1923 amounted to 1,509,800 tons, against 1,365,770 tons in 1922. The average production daily was 4,136 tons, as compared with 3,742 tons daily in 1922.

The principal oilfields from which the oil was derived comprised Moreni, 665,490 tons; Ochiuri, 202,590—the latter representing an increase of 70 per cent. for the year.

The internal consumption amounted to 901,740 tons—an expansion of 9 per cent.—the bulk being used in the Prahova district.

The capacity of the refineries is largely in excess of requirements. In 1923 the refinery products totalled 1,307,690 tons, as against 1,186,000 tons in 1922. Increase occurred under the headings of benzine, lamp oil and residues. Thanks to the improvement of the means of transport and distribution the internal consumption of petroleum products has been continually expanding the last few years. The exports also tending to increase, the stocks have become notably reduced, standing on the 31st December, 1923, at 110,340 tons, as against 250,700 tons at the end of 1919. Any further diminution would be attended with risk.

The production of crude petroleum in Roumania during the first half of 1924 amounted to 887,550 tons, as against 761,170 tons in the corresponding period of 1923. The yield from the Prahova district scored a noteworthy increase, while that from Damboritza fell off. It is expected that the total for 1924 will closely approach that of the immediate pre-war year—1,885,000 tons.

Considerable anxiety was occasioned about the middle of 1924 by the promulgation of a new mining law, and protests were made. As ultimately passed, the law does not affect the existing rights of foreign Companies operating in the country, nor of private owners of oil lands. It provides, however, that foreign Companies desirous of obtaining mining rights on Government-owned land, must, within ten years, comply with the provisions requiring a controlling participation of Roumanian capital. The tax on the gross production has been raised from 1 to 2 per cent.

AFRICA and ASIA.

In the search for fresh sources of oil supply, considerable attention has been devoted to the Portuguese Colony of Angola, United States and British capital being chiefly interested. Wells have been sunk in various localities ; up to the present no discovery of real importance can be recorded. Transport facilities are fairly good.

Much the same may be said in regard to Algeria. The importations of kerosene and gasolene in recent years have been steadily on the up grade ; for 1923 the amounts were 156,330 and 312,960 hectolitres respectively.

In Egypt the output continues to decrease. Drilling at Hurghada has failed to indicate any extension of the known productive area, and only a small measure of success has attended fresh drilling in the outside areas. The yield for 1923 totalled 152,800 metric tons, as compared with 172,000 tons in 1922. It is thought the dehydrating problem has now been solved.

A refinery has been constructed in Morocco for the purpose of dealing with the crude oil from the Gibel Iselfat wells.

THE FAR EAST.

Production in the Dutch East Indies continues to expand, the total for 1923 of 2,764,450 metric tons showing an increase of 19 per cent. upon the result for the preceding year. Here, as in one or two other localities, the question of taxation became a burning one. All crude oils were exempted from import duty, but a new tax was imposed on mineral oils.

Persia.

The richness and sustained production of the Maidan-i-Naftun Oilfield, Persia, make it one of the world's most important sources of petroleum. The boundaries of the productive area are being continually widened by prospect wells. So far, no dry holes have been encountered, nor any trouble with water. Appended are the output statistics for the past half-dozen years :—

		Tons.			Tons.
1917-18	..	917,700	1920-21	..	1,768,700
1918-19	..	1,106,400	1921-22	..	2,358,700
1919-20	..	1,385,300	1922-23	..	2,941,100

Russia.

The most interesting development in connection with petroleum in Russia consists in the discovery of two remarkable gushers—one during May, at Surakhani, formerly owned by Nobel Brothers ; the other, in July, at Bibi-Eybat—both in the Baku district. In each case a daily yield of some 100,000 poods was at one time shown. The output of the district for the half-year ended the 30th April was reported as 32,000,000 poods ; in the month of July, due to the gushers, it rose to 22,502,900 poods. On October 12th the price of crude oil at the wells was reduced from 35 to about 27 kopeks per pood, curtailment of the sinking fund charge enabling this to be done.

Conditions in the Russian oil industry are improving in a notable degree. The local administrations, responsible for the actual production, have succeeded in raising the yield to 66 per cent. of the 1913 total. Yet deficits are made, irrespective of any allowances for depreciation. Output Statistics for the three operating years ended 30th September are given below :—

1922	..	287,804,000	poods.
1923	..	320,602,000	,,
*1924	..	375,000,000	,,

* Estimated. 60 poods = one long ton.

What the industry lacks is transportation facilities and plant. "Credits" would enable these to be secured—and thus destroy practically the last remaining chance the original owners have of resuming any interest in their properties.

UNITED STATES.

The endeavours on the part of producers in the United States to get the oil situation under control were attended with a measure of success, the out-turn declining from over 2¼ million barrels weekly in August, 1923, to 1,871,100 barrels in January, from which level a recovery to slightly over two million barrels occurred. Drilling, however, continued on an extensive scale, and important discoveries were made, with the result that the yield for the first half of 1924 totalled 357,683,000 barrels, an increase of 13,254,000 barrels over the corresponding period of 1923. Nevertheless, the result for the whole year is expected to fall below that of 1923—namely, 735,000,000 barrels.

During the first half of 1924, California produced 118,109,000 barrels in place of 116,681,000 in the first and 146,338,100 barrels in the second half of 1923.

The Oklahoma yield decreased by 5,338,540 barrels to 80,024,000 barrels; this, despite a spectacular "come-back" in the Tonkawa field, which gave a big yield from new deep-sand discoveries described as "of the most sensational character ever seen in the history of American light oilfields." Due to the opening up of prolific wells in the Smackorez district, the production of Arkansas during the six months further expanded by 5,858,100 barrels to 24,355,910 barrels; but the North Louisiana field showed a considerable falling off. The outstanding incident in the Rocky Mountain field was the decline in the yield from Salt Creek, at one time thought likely to rival the famous Cushing pool of Oklahoma. Still, the fields as a whole gave 24,532,500 barrels, as compared with 20,329,250 barrels in the initial half of 1923. The largest relative increase was scored by the East Central Texas field, which at 26,324,300 barrels more than doubled its output—thanks to gusher wells in the deeper levels of the Powell district.

Stocks at the end of June last totalled 351,218,000 barrels, comparing with 248,213,000 barrels at December, 1922. The latest statistics of crude represent 171 days' supply, as against 162 days' for the stocks on hand at the beginning of 1924. Stocks of petrol, however, decreased somewhat.

In looking at the statistics as to stocks, regard must be paid also to consumption, which for 1923 reached the record total of 730,000,000 barrels, an increase of 26¾ per cent. It is worth noting also, that for several years past the ratio of imports to production has been on the down grade.

During the fiscal year ended the 30th June last, the United States export trade in petroleum and its products established a new record. Appended are the figures for the past two periods :—

VARIETY.	Twelve Months ended June, 1923.		Twelve Months ended June, 1924.	
	Gallons.	$	Gallons.	$
Crude	552,566,487	20,268,679	784,594,472	26,342,596
Total refined Petroleum ..	2,820,461,506	324,723,878	3,643,516,248	356,658,290
Gasoline, Naphtha and other light products	674,716,726	134,165,991	1,031,610,456	150,667,895
OILS. Illuminating ..	854,563,611	81,976,661	882,602,874	80,516,405
Gas and Fuel ..	937,243,885	29,687,604	1,361,122,655	41,613,640
Lubricating ..	353,937,284	78,893,622	368,180,253	83,860,350
Parraffin Wax	lbs. 327,282,705	11,102,991	lbs. 367,645,169	14,827,592

It will be seen that a notable expansion occurred under each heading—following a like characteristic in 1922-23. The value totalled $356,658,300 as against $324,723,900.

The production of gasolene (petrol) in the United States during 1923 totalled 179,903,500 barrels, the percentage obtained from the crude being 30·3—both record figures. Owing to improvements in the mechanics, the expansion in the demand for gasolene does not keep pace with the expansion in the number of cars.

Prospecting for petroleum on the Island of Luzon, Phillippine group, has been abandoned.

MEXICO.

The oil situation in Mexico may be regarded as having taken a turn for the better during the past twelve months. A large amount of drilling gave little result in the main, but work in the Panuco (heavy oil) district was rewarded with a noteworthy expansion in the production, while in the Southern (light oil) field one Company, last August, brought in a real gusher well, reminiscent of the palmy days of the industry. Appended are the statistics for the past two and a half years :—

	*Total.	South Field.	Panuco Field.
	Barrels.	Barrels.	Barrels.
1922	185,057,250	138,293,290	46,763,960
1923	149,340,840	61,647,580	87,689,480
1924†	74,061,800	19,925,500	54,136,300

* Including a small yield from the Isthmus zone. † Six months.

Although not sufficient fully to counterbalance the falling off in the supply of light oil, the expansion in the yield of heavy oil last year represented an increase of as much as 47 per cent. over the 1922 total. In the first half of 1924 the Panuco output further expanded, although a fresh shrinkage occurred in the yield from the Southern field.

Mexico has 2,696 miles of pipe line, which can handle 1,577,960 barrels of oil daily ; the small tank accommodation for transporting petroleum on the Panuco River to tank steamers at Tampico, deals on an average with 200,000 barrels daily. Export of petroleum for 1924 is calculated to reach not less than 141,500,000 barrels.

The increased world-wide demand for petroleum products has greatly stimulated the refining industry in Mexico, which now has 19 distilling plants, capable of producing 461,390 barrels daily. All classes of derivatives are produced.

During April, 1924, the regulations governing the importation of oil for refining purposes in Mexico were made public by the Government of that country. In each instance the Treasury Department will stipulate the length of the duration of the authorisation and the maximum limit of oil to be imported under the concession, which in no case shall be more than half the capacity of the refinery during the period in question, and no authorisation shall be granted for a period of more than six months.

SOUTH AND CENTRAL AMERICA.

Argentina.

A mild sensation was caused about a year ago by the announcement that an important British Company, after heavy expenditure on survey and prospecting work, had decided to withdraw from Argentina. While an overstatement, this appeared to be nearer the truth than the diplomatic *dementi* which followed it. The lie of the Argentine oilfields is uncertain, and the cost of production such as to preclude competition with the yield from fields not subject to the legislative restrictions prevailing here.

However, while discouraging private enterprise, the Government has mapped out a programme for the more intense exploitation of the oilfields owned by itself, the erection of tankage at various centres, and the installation of a large refinery at La Plata. A smaller refinery is to be put up at Plaza Huincul. This programme covers the estimated requirements, not only of the Government, but of the two private companies which are producing in Comodoro Rivadavia—the Astra Company (German) and the Cia Ferro-Carrilere de Petroleo. The production of the Government and of these two companies over the last four years has been as follows :—

	Government Production.	Private Companies.	Total Tons.
1920	226,545	31,964	258,509
1921	277,725	44,330	322,055
1922	348,936	101,264	450,200
1923	415,557	114,500	530,057

A gusher was struck in the Rivadavia district in April last.

Bolivia and Colombia.

Encouraging results have attended exploratory work in the Southern portion of Bolivia, although transport difficulties are great. The Government is entitled to 11 per cent. of any production. A new oil law has been passed.

Great strides can be recorded in the development of the oil resources of Colombia, where several large concessions have for some time past been receiving attention on the part of groups also interested in the adjoining republic of Peru. A pipe line is to be constructed from the field to a point on the north-east coast, a distance of approximately 360 miles.

Cuba, Panama, Peru.

So far, drilling for oil in Cuba has not met with any great degree of success, although a recent study of the geology of the island has aroused hopes for the future.

Gas and oil indications have been found in the Panama district, and drilling is in progress in various localities. The location of discoveries of commercial importance would obviously be of great utility to vessels using the canal.

In 1922, petroleum ousted copper from the first place in the mineral production of Peru, the yield totalling 4,387,000 barrels; last year it reached 4,637,000 barrels. The oil is of high quality, but transport facilities are inadequate, and the development of the industry, under the law which came into force in January, 1922, has not been as rapid as anticipated.

Venezuela.

There are indications that the oil fraternity have come to the conclusion that Venezuela offers the best prospects of any of the newer fields Drilling is proceeding on an ever-increasing scale, and a production on an important scale is being obtained. For example, the Mene Grande—almost entirely owned by one company—is giving some 10,000 barrels daily. Other fields displaying great potentialities are La Roza, La Paz and Conception. On the former the discovery well produced for a while at the rate of 100,000 barrels per day, but sanded up after nine days. A new pipe-line has been laid from the Mene Grande field to Lake Maraciabo. Transport, however, continues to be a restrictive factor. Present work in Venezuela is considered to be comparable to the activity which marked the Southern fields of Mexico in 1917. Production during the current year to date has greatly exceeded that of 1923.

BRITAIN'S BUSINESS IN OILS.

Once again the outstanding feature in this country's trade in petroleum or its products consists in the increase in the receipts of motor spirit—otherwise petrol or gasoline. During the nine months ended with September, the imports reached over 323 million gallons, as against less than 250 million gallons during the corresponding period of either of the two preceding years. Owing, however, to the successive cuts in price—already referred to—the expansion in value represented barely 12 per cent., as compared with $21\frac{3}{4}$ per cent. for the quantity. Fuel oil scores a moderate increase, but the use of paraffin for purposes of illumination is clearly on the down grade. A sign of the times is the illumination of hawkers' barrows by compressed gas! Taken as a whole, the expansion in the value has more than kept pace with the growth in quantity, the percentages as compared with 1923 being $13\frac{1}{4}$ and slightly over 11 respectively. Appended are the statistics in detail:—

Imports 1924 and 1923 (Nine months).

VARIETY.	QUANTITY.		VALUE.	
	1923.	1924.	1923.	1924.
	Gallons.	Gallons.	£	£
Lamp Oils	101,377,869	94,417,039	2,229,374	2,318,252
Motor Spirit	249,241,926	323,289,559	12,816,503	14,338,036
Spirit other than Motor	2,320,749	2,466,575	86,238	96,875
Lubricating Oils ..	66,126,347	77,314,330	3,750,778	4,530,378
Gas Oil	58,700,171	52,558,372	905,612	940,953
Fuel Oil	275,340,028	393,964,577	3,648,152	4,283,022
Other Sorts	48,226	235,651	6,902	33,186
TOTALS	753,158,386	844,246,103	23,443,559	26,540,702

Exports 1924 and 1923 (Nine months).

Variety.	Quantity.		Value.	
	1923.	1924.	1923.	1924.
	Gallons.	Gallons.	£	£
Lamp Oils	1,472,068	6,988,367	48,759	211,575
Motor Spirit	28,633,034	27,553,595	1,772,532	1,610,529
Spirit other than Motor	16,058	17,646	1,592	1,776
Lubricating Oils ..	1,519,873	1,315,591	137,900	146,765
Gas Oil	1,726,868	2,242,077	31,414	49,135
Fuel Oils	460,324	3,658,795	13,097	54,398
Other Sorts	60	240	9	12
TOTALS	33,828,285	41,776,311	2,005,303	2,074,187

In contradistinction to the experience in regard to imports, the despatches of lamp oil score a noteworthy increase. The most striking feature is the recovery of the exports of fuel oil to an amount slightly exceeding the total for the first nine months of 1922. The drop in 1923 may be attributed to the depressed condition of the freight market. Taken as a whole, an expansion of 23½ per cent. in the exports of petroleum products was accompanied by a gain of barely 3½ per cent. in the value. The foregoing figures do not include fuel oil shipped for the use of steamers, etc., which is not an export in the ordinary acceptation of the term. It may be interesting to note that the quantity for the 1924 period—189,[illegible]78,950 gallons—scored a fair increase and was well on the way to double the 1922 amount.

BRITISH EMPIRE.

Australasia.

The search for oil in Australasia has continued, and excitment has been aroused by reported discoveries in various localities. A find at Lake Bunga, Gippsland, was reported by the Mines Department to be of scientific interest only. A substance declared to have been found at Lake Macdonnell, South Australia, did not pass the Government test. Definite news has not yet come to hand as to whether a strike at Oralla, Southern Queensland, is of commercial value. Oil gas has previously been encountered in the district. Drilling in Papua (New Guinea) has so far been attended with inconclusive results. The Taranaki oilfields of New Zealand are to be again tested, but in view of the nature of the formation no great hopes of success are entertained locally. Boring is also in progress in Tasmania.

The refineries near Melbourne, erected jointly by the Federal Government and the Anglo-Persian Oil Company, commenced operations early in the year.

Burma.

As regards Burma, few discoveries of importance have been reported since the original finds of 1910. For the three years ended in 1922, the Yenangyaung field produced 63 and the Singa field 34 per cent. of the total. The yields for each year were :—

1920	..	279,707,170 Imperial gallons.
1921	..	296,092,050 ,,
1922	..	281,759,200 ,,

It is considered that the Yenangyaung field has passed its prime, but that the production from the Singa field will increase.

Canada.

The Ontario fields reached their maximum in 1900, when over 900,000 barrels were produced; following this there was a sharp decline. For 1923 the total amounted to 159,400 barrels only. The immediate prospects for large new fields are considered to be not particularly bright, although fresh wells are occasionally brought in. The production of New Brunswick is confined to one area known as the Stony Creek field. In Alberta, commercial production up to the present has been confined to the Sheep Creek field south of Calgary. Early last year, however, a well was brought in near Wainwright, and several shows of gas have been encountered. In the Fort Norman area, Mackenzie River district, an existing well, upon being deepened, gave an increased flow. Other work had little result. As previously pointed out, owing to transportation difficulties, this field can only be regarded as of possible future importance. Athabasca is counted among the prospective oil fields of Western Canada.

In Newfoundland, encouraging indications have been found near Parsons Pond, and on the West coast.

Canada's output of crude petroleum in 1923 totalled 170,170 barrels, valued at $522,000, as against 179,100 barrels valued at $611,200 in the preceding year.

Ceylon.

The 1923 imports of kerosene into Ceylon totalled 5,261,140 imperial gallons—a substantial decrease as compared with the abnormal figures for 1922. The establishment of the Government's bulk oil installation at Kolonnawa, near Colombo, has converted Ceylon into a market for bulk oil and kerosene.

Sarawak.

Remarkable progress has been scored in recent years by the petroleum industry of Sarawak (British North Borneo). The commercial development of the oilfields dates only from 1911; the results are given below:—

	Tons.
1911	170
1912	5,635
1913	26,067
1914	64,503
1915	66,845
1916	88,499
1917	75,458
1918	68,629
1919	81,739
1920	141,492
1921	199,856
1922	403,394
1923	560,000

The present weekly production is estimated at 11,000 tons. This places Sarawak second on the list of the oil-producing countries of the British Empire. The field occupies a favourable geographical position, being only 630 miles from Singapore, and 1,080 miles from Hong Kong.

Trinidad.

For 1923 the output totalled 444,920 tons, an increase of some 49,000 tons upon the record result for 1922. During the first part of the current year a further and substantial expansion took place. This is largely the outcome of the success attained in dealing with the problems connected with the oil industry of the island; in particular, the sand trouble.

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Section IV.

IRON AND STEEL.

IRON AND STEEL.

WHAT ARE THE PROSPECTS OF IRON AND STEEL IN 1925?

The present high cost of coal is the chief obstacle to expansion in the British Steel Trade.

Demand, both at home and abroad, will increase during the coming year.

Prices will be kept low by keen competition, but should improve as the year advances.

IRON AND STEEL.

The year 1922 witnessed the blackest period on record in the Iron and Steel industry. This was followed in 1923, by a somewhat more encouraging year of business, the production of pig-iron being the highest since the post-war boom year of 1920, whilst the production of steel ingots and castings actually exceeded that of 1913. The export trade also approached the pre-war dimensions, both in manufactured iron and steel and pig-iron. The year 1924, however, has not fulfilled expectations, demand both at home and abroad having fallen off to a marked extent in the later months.

As far as our export situation is concerned, keen competition has been experienced, the Continental countries, particularly Belgium, underquoting British merchants in all branches. Germany also has been able to supply British yards with shipbuilding plates at £2 per ton less than British manufacturers.

There are several reasons for the unfavourable position in which British manufacturers find themselves in competition with the Continent. Hours of labour in this country are 40 per week against 55 to 60 on the Continent, where, in addition, wages are a good deal lower. This alone, apart from high fuel and transport costs, is sufficient to show the disadvantages under which the British steel trade is suffering.

The effect of this competition is shown in a diminished volume of exports and an expansion of imports.

United Kingdom Exports of Iron and Steel.

	First Nine Months of 1913.	1922.	1923.	1924.
	Tons.	Tons.	Tons.	Tons.
Pig-Iron ..	850,859	459,127	716,248	442,075
Railway Rails	383,507	197,649	224,552	145,275
Steel Bars ..	194,195	141,991	249,754	213,759
Machinery ..	513,697	282,483	320,953	337,923
Iron and Steel Manufactures	3,751,463	2,340,832	3,181,175	2,929,162

Imports of Iron and Steel.

	First Nine Months of 1913.	1922.	1923.	1924.
	Tons.	Tons.	Tons.	Tons.
Pig-Iron ..	156,405	113,259	93,317	215,593
Iron and Steel	1,617,902	597,336	1,010,833	1,753,659

The exports of Iron and Steel for the month of September were the lowest for over two years, and less than 70% of the pre-war average. Imports on the other hand were 78% in excess of those of a year ago.

The world's demand for steel is at present far below the productive capacity. A high rate of production was maintained in the early months of the year in anticipation of an improved demand at home and abroad, but this improvement failed to materialise. Large stocks have been accumulated and the natural result has been the closing down of blast furnaces all over the country. During the fifteen months ended September, 1924, the number of furnaces in blast declined from 222 to 170. The 1913

average was 248. The production of pig-iron and steel in the United Kingdom during this period has been as follows :—

Period.	Pig-Iron.	Steel Ingots and Castings.
	Tons.	Tons.
1913 Monthly Average ..	855,000	638,600
1920 ,, ..	669,500	755,600
1921 ,, ..	218,000	308,600
1922 ,, ..	408,000	490,100
1923 ,, ..	619,900	707,300
1923—		
September	558,600	695,100
October	592,600	702,100
November	598,200	749,500
December	626,900	653,300
1924—		
January	636,600	694,300
February	612,700	767,600
March	668,600	825,000
April	618,400	711,500
May	650,900	809,700
June	607,800	651,500
July	615,600	693,300
August	588,900	527,500
September	569,200	645,000
October	586,400	678,500

The future of our export trade, naturally, depends entirely on the competitive power of this country. The essential need of the British Industry is a reduction in labour costs either through the medium of extended hours of work or lower wages. The former alternative would be the more satisfactory from all points of view and has a better chance of succeeding with the men. Although strong efforts are to be made by German labour to revert once more to the eight-hour day, it is extremely unlikely that anything of this nature will be accomplished.

British prices have been reduced to the minimum, leaving practically no margin of profit :—

United Kingdom Iron and Steel Prices.

1924	Cleveland No. 3 Pig-Iron G.M.B.		Hematite East Coast No. 1.		Steel Ship Plates ⅜ths.	
January	99/–	100/–	103/–	103/6	190/–	210/–
April	92/–	95/–	100/–	—	190/–	205/–
July	86/–	89/–	95/–	97/6	205/–	—
October	80/–	81/–	87/6	89/6	195/–	205/–

November shows a slight hardening of prices. The United Kingdom has received most-favoured nation treatment for iron and steel requirements in Japanese reconstruction work, but the Conventional Treaty expires on March 10th next, and this country will be subject to a general tariff on exports to that market at the same rates as its competitors. Japan is likely to prove a good market for steel goods over next year, for in addition to her requirements for making good the havoc wrought by the earthquake, a £3,000,000 scheme of railway electrification is being undertaken by the Government. This sum does not include allowances for locomotives, a large number of which will be required, and it is probable that this country and the United States will share this business. This is the first portion of a scheme for the electrification of the major part of the Japanese railway system.

Another recent contract has been allotted a Midland firm for the supply of 24,000 tons of steel rails for an extension of the Uganda Railway in British East Africa. This contract will afford several weeks' employment for the contractors.

In spite of the advantages in lower working costs held by German manufacturers, Messrs. Dorman, Long & Co. have secured contracts for the supply of 15,000 tons of steel plates and 10,000 tons of angles from Germany, while shipbuilding orders for four ships from Belgium and two from Italy have been received by British shipbuilders. It is noteworthy that these are the first shipbuilding orders from abroad for some time.

These recent foreign contracts offer some encouragement to British producers that the world's demand is expanding and that 1925 will witness an improvement on the trade of the current year.

Home Demand for Iron and Steel.

The shipbuilding industry normally consumes about one-third of the iron and steel production of this country. Reference to the "Shipping" article will show that the prospects in this industry are somewhat brighter. The amount of idle tonnage has been largely reduced and, given an expansion in trade, the present surplus would soon be absorbed, and thus pave the way for a more healthy demand for new tonnage. Merchant tonnage under construction in the United Kingdom is shown hereunder :—

Quarter ended		Actual Building. Tons.		Suspended Work. Tons.
December,	1921	1,920,000	..	—
March,	1922	1,619,000	..	—
June,	,,	1,439,000	..	481,000
September,	,,	1,198,000	..	419,000
December,	,,	1,120,000	..	348,000
March,	1923	1,311,000	..	181,000
June,	,,	1,208,000	..	130,000
September,	,,	1,029,000	..	242,000
December,	,,	1,231,000	..	164,000
March,	1924	1,373,000	..	101,000
June,	,,	1,465,000	..	52,000
September,	,,	1,468,000	..	—

Other important factors affecting the inland demand for iron and steel are :—

(1) Port of London Authority's dock extension scheme involving an outlay of £1,138,000 at the Surrey Commercial Docks and Canada Docks; new passenger facilities at Tilbury, and renovations at the East India Export Dock.

(2) The decision of the Southern Railway Company to make an immediate start with its huge £13,000,000 dock extension scheme at Southampton.

One of the first acts of the new Government in connection with their Housing Scheme will be to investigate the possibilities of steel houses. A good deal has already been done in that direction, particularly in Scotland, where extensive experiments in the construction of dwelling houses made of steel have been carried out.

France.

France has maintained a fairly healthy state of affairs in her iron and steel industry during the past twelve months, and her pig-iron output now exceeds that of the United Kingdom. Her output capacity has, of course, been substantially increased since the war by the ceded districts of Alsace-Lorraine, containing extensive iron ore deposits in addition to pig-iron production plant. But as these districts were amongst the most devastated regions of the war the actual productive capacity is not greatly increased. The last year, however, has seen a great improvement in the plant, and France has been able to obtain ample fuel at a more economic rate since the evacuation of the Ruhr and a definite agreement for Reparation supplies of coal. Production has improved steadily since the spring of 1923 :—

Production of Iron and Steel in France.

	ENGLISH TONS.	
	Pig-Iron.	Steel.
Average Monthly, 1922	427,000	370,300
,, ,, 1923	432,500	406,500
January, 1924	574,200	530,200
February, ,,	578,500	543,500
March, ,,	626,700	561,400
April, ,,	638,300	556,100
May ,,	645,200	586,400
June, ,,	626,100	543,800
July, ,,	623,400	553,500
August, ,,	633,100	572,400
September, ,,	631,100	588,700

Ruhr coke and coal in substantial quantities and a reliable system of supply is essential for Alsace-Lorraine iron production, and any agreement arrived at between French iron producers and German interests should effect a somewhat more economical and certainly smoother working system.

With a closer co-operation of the various interests in Eastern France, especially between the coal and coke and iron industries, France should in the future be able to expand her export trade. As will be seen by the following figures French exports in recent months have been below the best :—

French Imports and Exports of Iron and Steel.

	ENGLISH TONS.	
	Imports.	Exports.
Average Monthly, 1922	63,000	160,000
,, ,, 1923	57,900	177,800
January, 1924	55,300	205,900
February, ,,	57,600	267,500
March, ,,	64,500	300,400
April, ,,	63,900	305,900
May, ,,	49,500	220,100
June, ,,	53,000	223,000
July, ,,	60,600	162,500
August, ,,	—	178,600

Belgium.

Belgium, the only Allied country to suffer a complete occupation and disorganization during the war, was the first country to recover her pre-war coal production. She has the same distinction as regards iron and steel, and Belgium now has a production considerably in excess of her pre-war output.

Belgian Iron and Steel Production.

	ENGLISH TONS.	
	Pig-Iron.	Steel.
Average Monthly, 1922	131,700	127,800
,, ,, 1923	178,700	180,400
January, 1924	204,800	221,000
February, ,,	201,800	214,700
March .. ,,	226,000	227,500
April, ,,	225,900	235,900
May, ,,	241,600	245,500
June, ,,	232,000	214,200
July, ,,	247,400	233,700
August, ,,	236,600	230,600

Belgian competition in our inland markets has been the severest with which out steel makers have to contend. Particularly is this so in the shipbuilding industry where Belgian ship plates have been supplied at £2 per ton below that of the British product. Recent indications show that increased and keen competition from Germany, Luxemburg and Lorraine has adversely affected the Belgian export market, and has had a weakening tendency on prices.

A factor giving temporary relief is the new import tariff which comes into force in Germany on January 1st, so that Germany is buying heavily during the close of this year to avoid these duties. This buying is particularly strong in semi-finished steel.

The recent Belgian Mission to Japan to study prospects in the reconstruction work in that country has led to a suggested alliance of the metallurgical interests in France, Belgium and Luxemburg to increase output capacity and standardise production for export purposes, with the object of being more favourably placed to meet British, German, and American competition for the more important Japanese contracts.

The home demand has been temporarily strengthened by a big scheme of reconstruction and extension of the Belgian State Railways.

The following table of imports and exports includes Luxemburg, the Grand Duchy being now included in Belgium for Customs and Tariff purposes.

Belgium and Luxemburg Iron and Steel Trade.

ENGLISH TONS.

		Imports.	Exports.
Average first half,	1923	37,700	154,300
July,	1923	42,000	220,000
August,	,,	52,900	209,500
September,	,,	46,700	210,200
October,	,,	39,600	257,900
November,	,,	59,500	208,000
December,	,,	77,600	269,500
January,	1924	50,200	203,000
February,	,,	50,500	239,300
March,	,,	66,200	289,200
April,	,,	60,100	293,100
May,	,,	52,700	325,500
June,	,,	49,000	287,800
July	,,	39,000	265,700

Production of pig-iron and steel in Luxemburg during the first nine months of this year was close on 1,560,000 and 1,350,000 English tons respectively.

Germany.

Germany has always possessed that initiative in commerce and industry, on the part of both masters and men, that is somewhat lacking in the United Kingdom. As evidence we can study the excellent Cartel system of the pre-war day, without any parallel in this country, and the present 55 to 60 hour week in Germany compared with our 40 to 48 hour week. Germany, with a population of about twenty million in excess of the United Kingdom, has 200,000 unemployed, against our one and a quarter million—a sure sign of her ability to resuscitate her industries.

Although at present iron and steel works are only working at about 60 per cent. of their capacity, the Loan of £40,000,000 will enable Germany to very largely develop her industries.

The former "horizontal" Cartel system in vogue in Germany embraced practically the whole of the German iron and steel interests, controlling production, distribution and selling agencies, and also had authority to fix minimum prices. From 1920 its power waned, partly under Government pressure through public agitation, and partly by the sudden growth of the "vertical" Cartel system with the Stinnes group.

The close of the year 1924 has seen the re-forming of the system under the style of the "Stohlwerks Verband," although its scope is limited compared with its predecessor. The new Association embraces about 95 per cent. of the steel produced, and while having no powers, at any rate for the present, over prices, it will be empowered to fix output quotas of the different works, and allocate orders accordingly. Power to sell on behalf of its members is withheld as during the lapse of the Association many individual Companies have built up excellent selling organisations. One of its former functions was the arrangement of International Combines, and United Kingdom exporters and manufacturers will watch with interest any effort towards industrial alliances between France, Belgium and Germany.

Germany's Export Position.

From 1919 to 1923 three shifts of eight hours each were worked in the German iron and steel industry. In order to meet foreign competition, the year 1924 saw the introduction of pre-war arrangements of two shifts of ten hours. The beneficial effect of this on low production costs is shown in the case of a large Westphalian iron works. Under the introduction of the ten-hour shift it was able to reduce its staff from 13,500 to 9,200, and maintain the same production as formerly—a saving in the wages bill of about one-third. Another instance is of a smelting firm increasing its pig-iron production from 38 tons per month under the eight-hour shift to 68·4 tons under the ten-hour shift.

When the beneficial effect of the Dawes scheme is fully felt, Germany will be able to augment her exports with the growing world demand for iron and steel. German iron and steel imports and exports are as follows :—

	ENGLISH TONS.		
	Imports.		Exports.
Average Monthly, 1922	151,600	..	208,700
,, ,, 1923	146,900	..	109,000
January, 1924 ..	101,200	..	116,000
February, ,, ..	124,700	..	73,900
March, ,, ..	89,100	..	104,700
April, ,, ..	75,400	..	87,300
May, ,, ..	95,400	..	89,700
June, ,, ..	143,800	..	84,700
July, ,, ..	100,300	..	89,400

The United States.

The United States does not enter largely into competition with European countries, by far the larger portions of her export finding their way to Canada.

The United States, have, however, made bold and fairly successful bids for the Japanese reconstruction trade, and have obtained substantial orders for steel rails and black steel sheets. Large quantities of tinplates have also been shipped—25,000 tons in the first eight months of 1924, compared with 18,000 tons for the corresponding period of 1923.

America is handicapped in so far as overseas trade is concerned by the distance of her manufacturing centres from the seaboard, heavy transport rates, and lack of railway facilities.

United States exports have shown a serious falling off in recent months :—

U.S.A. Iron and Steel Trade.

	ENGLISH TONS.		
Period	Imports.		Exports.
Monthly average, 1922	59,545	..	165,525
,, ,, 1923	61,217	..	166,049
January, 1924 ..	26,675	..	247,942
February, ,, ..	42,269	..	164,820
March, ,, ..	39,278	..	123,618
April, ,, ..	50,969	..	131,276
May, ,, ..	66,801	..	154,136
June, ,, ..	60,569	..	163,770
July, ,, ..	30,410	..	137,481
August ,, ..	44,928	..	134,628

On January 1st, 1924, there were 231 furnaces in blast. By June the number had been reduced to 184, and 150 by September. October, however, recorded a net increase of 23 to 173. The United States has a capacity output per annum of close on sixty million tons of steel ingots and castings, but is only working to about 40 per cent. of this quantity, while pig-iron is being produced at about 50 per cent. of its capacity.

The production of pig-iron and steel from January, 1923, is given in the subjoined table.

MONTH.	PIG-IRON.		STEEL.	
	1923.	1924.	1923.	1924.
	Tons.	Tons.	Tons.	Tons.
January	3,229,604	3,018,890	2,479,727	2,274,005
February	2,994,187	3,074,757	2,259,154	2,410,658
March	3,523,868	3,466,086	2,724,305	2,674,565
April	3,549,736	3,233,428	2,704,360	2,463,027
May	3,867,694	2,615,110	2,976,892	1,927,461
June	3,676,445	2,026,221	2,727,208	1,507,110
July	3,678,334	1,784,899	2,752,738	1,343,952
August	3,449,493	1,877,145	2,680,851	1,413,314
September	3,125,512	2,053,264	2,363,967	1,509,360
October	3,149,158	—	2,394,922	—
November	2,894,295	—	2,170,567	—
December	2,920,982	—	2,167,563	—
Total	40,059,308	—	30,402,254	—

The Outlook.

There is every indication of a more active market in iron and steel with a more fully employed industry during the coming year.

Industrial Germany is an essential part of industrial Europe, and the effect of the Dawes Scheme upon German industries, whilst increasing competition to some extent, should lead to a general expansion of the demand for iron and steel.

The result of the recent election in this country will make its influence felt on industry generally. Apart from its political aspect, the prospect of a stable Government for some years to come will enable the manufacturer and buyer to look forward to the future with that confidence which is essential to any trade improvement.

As regards the competitive power of the United Kingdom compared with other European countries, the present tendency on the part of the Continental worker to agitate for higher wages should result in reducing the difference in working costs and thus prove beneficial to this country.

Probably the most keen competitor of the future will be France. Pre-war Germany held iron ore deposits of 3,608 million tons, and ranked third among the producing countries of the world. With the ceding of the valuable Alsace-Lorraine field to France in 1918, she receded to sixth place, losing deposits of 2,330 million tons to France, which country is now the premier producing country of the World, owning deposits of 5,630 million tons.

Thus France, when producing at its full capacity, will have a surplus of about 29 million tons of iron ore. The value of this acquisition to France is seen in her greatly expanding pig iron output. There can thus be little doubt that France will be our chief competitor.

The home demand for iron and steel in the coming year gives definite promise of improvement; the reduction in idle tonnage and the resumption of building upon those ships on which work had been suspended augur well for an increase in shipbuilding which will follow any expansion in the general trade of this country.

The huge dock schemes of the Southern Railway at Southampton, and of the Port of London Authority, will make substantial calls on the iron and steel industry. Building has already commenced on the two Government cruisers, one at Barrow and one at a Naval dockyard; while the Australian Government has announced that the second of its cruisers will probably be built in this country.

The outlook for the British steel trade resolves itself into a question of competition. The present high cost of coal is the chief stumbling-block to a considerable revival in the British steel trade. An average of something like seven tons of coal is used for each ton of steel in its finally manufactured state. Our ironmasters, shipbuilders and engineering works are facing very keen competition, and they find one of their greatest handicaps is the price they have to pay for coal and coke as compared to their Continental competitors.

German, American, Belgian and French furnaces and mills are all getting coal and coke at lower prices than British works. Coal is the most important item in the cost sheet of pig-iron, raw steel and semi-manufactured steel, and this advantage, secured by our foreign competitors, is enabling them to undersell us in foreign markets and to pour their products into England at prices with which the home works cannot compete. Some solution of the present economic position of the coal trade will have to be found, and there is a strong movement afoot to re-introduce the eight-hour day in order to reduce costs and selling prices, and enable the British coal trade to regain its foreign markets.

It has been estimated that a return to the eight-hour day would reduce the cost of producing coal by 2/6 to 3/- a ton. If this could be done it would produce a marked effect upon steel costs and prices, and place the industry in a strong position to compete with Continental manufacturers.

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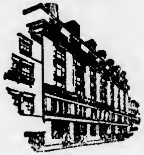

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Section V.

COPPER.

COPPER.

WHAT ARE THE PROSPECTS OF COPPER IN 1925?

Prospects of increased consumption of copper in 1925 are promising. All over the world electrification schemes are being carried out, and Germany, the principal European consumer, has been placed in a position more freely to satisfy her requirements. Consumption generally is increasing more rapidly than production, and a steady diminution of surplus stocks is practically inevitable.

The price of the metal should consequently improve, and it may be taken that in 1925 the comparatively moderate values of 1924 will be appreciably surpassed. A rise in the spot price of Standard Copper in London to at least £75 may safely be reckoned upon.

COPPER.

The outstanding feature of the copper situation towards the close of 1924 is the decrease in the world's visible supplies. That decrease has come about in spite of considerably increased production, and is due, of course, to greatly enlarged consumption. It would appear that the abnormal conditions of the post-war period have ceased to exist. During the war production was stimulated by high prices. and though consumption in connection with the manufacture of armaments was on a very large scale, the conclusion of hostilities found the world in possession of substantial surplus stocks. Available supplies were reinforced by the addition of the copper contained in disused munitions. There was all the appearance of a glut which would take years to absorb. But consumption exceeded expectations and, after a comparatively brief period, mines, which had closed down owing to the low prices caused by excessive supplies, began to resume production.

The output of the metal has been on the upgrade ever since, and at the same time there has been a steady increase in the demand. Consumption seems at last to have overtaken production, and but for the decrease in construction activities in the United States in the earlier half of 1924 it is quite possible that a serious shortage would have occurred.

A Real Improvement.

From the producer's standpoint the position has undoubtedly undergone a real improvement. The decrease in the stocks of unsold copper, as already stated, has occurred in the face of a large expansion in output. The world's production for 1923 showed an increase of 43% on that of 1922, and was 140% in advance of that of 1921. These large increases were the outcome of the renewed activities of mining companies, principally in the United States, which had curtailed or suspended their production in the years immediately following the termination of the war, owing to the accumulation of stocks and the recovery of supplies from the dismantling of munition factories all over the world. In the war period all available supplies of the metal had been absorbed by armament manufacturers. In the earlier years of peace, copper began to be in demand for ordinary industrial purposes, and the chances are that within the next few years the world's copper requirements for electrical and other developments will exceed those of the munition makers during the period when the output of munitions was limited only by the supply of the necessary raw materials.

An Essential Construction Metal.

From the foregoing remarks it will be inferred that the prospects of the copper producing industries are extremely favourable. Although the world's principal producing mines are now operating at about 90% of their producing capacity they should have some difficulty in keeping pace with the demands of consumers. More than ever is it being realised that copper is playing an essential part in the world's industrial development. Copper is a construction metal of the first importance. To-day more than half of the world's output is being absorbed by the electrical industries. A few years hence they are likely to use up two-thirds of the world's production. If there is to be, as there must be, progress along the lines of electrical development, whether for power, lighting, or telephonic and radio communication, a greatly increased consumption of copper is inevitable. A large extension of electrification is now in progress all over the world. Even in Great Britain, which is very far from being in the forefront of electrical development, the volume of current delivered in 1923 was three times as large as in 1913. In the United States there is in contemplation an electrification project which promises to absorb millions of tons of copper within the next decade. Immense quantities are already being absorbed by the manufacturers of motor cars and wireless sets. In the years ahead there will be a further large demand for copper in connection with general building operations, including housing schemes, more especially for brass plumbing, brass hardware, copper roofing and copper wiring for electric light. Even if the production of armaments ceases, ample compensation should be found in the demand for copper for purely peaceful purposes.

Potential Production.

In view of the prospective heavy demand for the metal, it is interesting to consider what are the chances of the world's resources being able to meet future requirements. Present production is believed to be within 15% of total capacity, so that from existing mines no appreciable expansion in output need be expected. The combined output capacity of existing mines and mills is reckoned at about 1,525,000 tons of refined copper annually. It is very doubtful if that production will prove equal to the world's needs in the event of extensive electrical developments in the years immediately ahead. It is true that copper is so indestructible that nine-tenths of the metal produced is still in use. Nevertheless, accumulated supplies would appear to be hardly sufficient for the world's needs. Known resources of recoverable copper are estimated at approximately 33,000,000 tons, while even if the most favourable anticipations are realised with regard to the continuity of veins, the aggregate amount of the metal in sight will not exceed 40,000,000 tons. Should consumption continue to increase as it has recently been increasing, the amount of copper in sight would be sufficient to supply the world's requirements for only about 22 years. On the other hand, it is a reasonable expectation that the world's supply of coal and iron will last for at least three hundred years and possibly five hundred. The relative shortness of the world's copper supplies in sight will thus be realised.

Price Fluctuations.

At the end of 1923 the price of standard copper stood at £60 17s. 6d., having fluctuated during the year between the extreme quotations of £59 5s. and £76 5s. In the year 1924, the price, taking the end of the month quotations, has been up to £66 2s. 6d. in March and down to £60 17s. 6d. in January. There was a rise in the first quarter of the year followed by a reaction and then a recovery, but values as a whole hardly reflected the improved statistical situation. The highest, lowest, and closing prices of standard copper since 1913, the last pre-war year, are recorded in the following table :—

	Highest.			Lowest.			Closing.		
	£	s.	d.	£	s.	d.	£	s.	d.
1913	77	2	6	61	15	0	65	2	6
1914	66	15	0	49	0	0	56	12	6
1915	87	10	0	57	2	6	86	2	6
1916	153	0	0	84	0	0	139	0	0
1917	140	0	0	110	0	0	110	0	0
1918	122	10	0	100	0	0	112	0	0
1919	117	10	0	73	10	0	115	5	0
1920	122	5	0	70	0	0	71	15	0
1921	75	12	6	65	5	0	66	5	0
1922	66	0	0	57	2	6	64	0	0
1923	76	12	6	59	2	6	60	12	6
1924	67	12	6	60	12	6	64	0	0

It will be seen that copper values reached their zenith in 1916 since when they have declined almost without interruption. Even the highest quotation of 1923 was not much more than half that of the boom year 1916, when the metal was in strong demand for munition purposes. Recent prices have thus been relatively low, even when compared with pre-war standards, and indicate that consumers have not been the victims of profiteering. The fall in prices which has coincided with a consumption exceeding production is partly due, it should be noted, to reduced mining costs.

In the following table are given the spot quotations of standard copper in London during 1924 at fortnightly intervals up to the middle of November :—

January	3	£61	10	6	to	£61	12	6
,,	16	£60	10	0	to	£60	12	6
February	1	£60	17	6	to	£61	0	0
,,	15	£64	15	0	to	£64	17	6
March	3	£67	7	6	to	£67	10	0
,,	17	£65	12	6	to	£65	15	0
April	1	£65	0	0	to	£65	2	6
,,	16	£64	10	0	to	£64	12	6

QUOTATIONS IN 1924—*continued.*

May	2	£63	7	6	to	£63	10	0
,,	16	£60	17	6	to	£61	0	0
June	3	£61	15	0	to	£61	17	6
,,	17	£61	10	0	to	£61	12	6
July	1	£61	12	6	to	£61	15	0
,,	16	£61	0	0	to	£61	2	6
August	1	£63	0	0	to	£63	2	6
,,	15	£63	15	0	to	£63	17	6
September	1	£63	17	6	to	£64	0	0
,,	15	£62	15	0	to	£62	17	6
October	2	£62	2	6	to	£62	5	0
,,	16	£62	7	6	to	£62	10	0
November	3	£63	17	6	to	£64	0	0
,,	17	£64	5	0	to	£64	7	6

Statistical Secrecy.

America still dominates the copper situation, producing slightly more than one-half of the world's supplies and consuming almost 50%. Consequently statistics of American production and consumption are of the utmost importance to copper users throughout the world. In several years past such statistics were regularly compiled for the benefit of an association of American mining and smelting interests, and such information was in due course made public. For reasons best known to itself the Association in question decided to suspend the monthly statistics of production, exports and deliveries to home consumers. There can hardly be any doubt that in adopting this policy of secretiveness the Association is taking up an attitude inimical to the interests of the producers whom it is supposed to represent and protect. It permitted statistics to be published broadcast when supplies were expanding and proving considerably in excess of requirements, with the result that consumers were able to take advantage of the information disclosed by restricting their purchases and thereby bringing down the price of copper to an abnormally low level. At the very time when statistics would reveal steadily diminishing supplies and cause consumers to increase their stocks in view of the possibility of a shortage with higher prices in the future, statistics are withheld. This policy of suppression is indubitably a mistaken one, and it is not surprising to hear that the Association is seriously considering the question of abandoning it.

A Diminishing Surplus.

According to such statistical information as is available, stocks of copper have undoubtedly diminished within the past few years. At the end of 1920 the amount of copper refined, and in process of refining, was slightly over 500,000 long tons, being by far the largest accumulation in the history of the industry. One consequence of their excessive supplies, reinforced by the return of copper used for war purposes, was a suspension of production among the largest American mines and a restriction of output by the principal producers of Chile. In other countries mines continued to operate almost to full capacity, and it was mainly the American producers who shouldered the burden of curtailed production. But they stand to benefit in the long run by their sacrifices, as had they not restricted production, supplies would probably have exceeded even the increased demand.

In the years 1921, 1922 and 1923 the world's consumption of the metal exceeded by over 130,000 tons the quantity produced. In the first half of 1924 American deliveries to home consumers and exporters showed an excess of nearly 40,000 tons over production and imports. Thus in three and a half years world stocks have been depleted by some 170,000 tons to approximately 332,000 tons. It is a remarkable fact that when, early in 1917, American stocks amounted to about 246,000 tons or 86,000 tons less than the world's present total, copper was selling at double its present quotation. Existing stocks are equal to only three months' consumption, being just sufficient for the period it takes to bring copper from the mines, through the refineries, to consumers. It is fairly obvious, then, that there is not much chance of available stocks being substantially augmented. Indeed, the indications are all in favour of a further diminution of supplies.

Increasing American Exports.

America remains by far the most important copper exporter of the world. More than half the world's copper is produced there, while some 40% of the remainder goes there to be refined. In the three years preceding the war, America's exports averaged about 350,000 tons per annum. During the war there was naturally a falling off owing to increased domestic consumption for the manufacture of munitions and the closing of the principal European market, that of Germany. Since the war, exports have shown a steady recovery, amounting to 227,000 tons for 1919, 275,000 tons for 1920, 280,000 tons for 1921, 325,000 tons for 1922 and 363,000 tons for 1923. In the first half of 1924 exports reached 241,500 tons or at the rate of 483,000 tons per annum. The increase is, of course, the consequence of the revival in the demand from Europe.

It is an interesting fact that exports for the first nine months of 1924 amounted to no less than 407,000 tons, of which Germany took over 85,000 tons or nearly 22%; while the French and British proportions were each about 20%. The bulk of the rest was sent to Italy, Holland, and Belgium, and probably some of the shipments to the two latter countries were destined for Germany.

Consumption and Value.

It is a curious and anomalous fact that while consumption is increasing—and increasing at a rate greater than the increase in production—the price of the metal late in 1924 was appreciably below the lowest quotation of the year. It is no doubt correct to say that low prices have contributed to increased consumption. Cheapness stimulates the purchase and use of any commodity. But in face of the statistical situation it is obvious that low prices cannot indefinitely continue. Sooner or later consumers will have to be prepared to pay more. And the measure of the advance will depend upon the development of those manufacturring industries in which copper is an essential raw material.

Production and Prices.

According to the best judges it is unlikely that the world's production of copper—it was 1,280,000 tons in 1923—will be increased to 1,500,000 tons before the next few years, no matter how the price of the metal advances. The prospective productivity of the world's known mines foreshadows only a relatively small increase in output, and unless sources of supply are reinforced by new discoveries, no substantial increase in production can be reckoned upon. Meanwhile the more general use of electric power all over the world should cause a rapid increase in the demand for copper. Everywhere great electrification projects are in contemplation. In Germany, France, and even England, schemes are being seriously considered for a great extension of the production and transmission of electrical energy. The electrification of railways, at present in its infancy, not only here but on the Continent and in the United States, is bound to make immense strides within the next five or ten years. At the same time enormous quantities of copper are being consumed in connection with the manufacture of motor cars and of radio sets. A big increase in housing accommodation at home and abroad means a greatly increasing consumption of copper in connection with electric light wiring and brass plumbing fixtures. There must thus be a steady and substantial increase in the demand for copper, for which so far no adequate metallic substitute has been discovered.

Prospects of Production.

What, it will be asked, are the chances of production being increased to an extent sufficient to provide for the world's rapidly growing requirements ? So far as can be foreseen they are not very favourable. The ores in important American centres of production, such as the Lake Superior district in Michigan and the Butte district in Montana, are not growing richer but are decreasing in value as depth is attained. And lower-grade ores mean increasing production costs, which can only be covered if selling prices appreciate substantially. In South America the prospects of increased production are more promising, but even if the output of that area is doubled, it will merely help to make good a possible decline in the production of the United States. In Europe there is practically no hope of any notable expansion in production and the total Continental output will continue to represent but a very small fraction of the world's supplies. In Asia a considerable increase in production would be possible if the Bolshevist regime were to come to an end, and the vast resources of Siberia were to be developed with the help of British capital and British technical skill. But in the present position of Russian politics, no appreciable increase in copper supplies from that quarter can be counted upon. Australia's copper resources, which are of the low grade variety, are almost negligible.

Africa would appear to be the great hope of the future, so far as copper supplies are concerned, especially the region of the Belgian Congo, where the Union Minière has the largest developed tonnage of high grade copper ore of any mine in the world. But developments in that area will probably be hampered by the restriction of transport communications, and for some years ahead copper consumers will have to depend upon America, North and South, as the principal sources of their supplies.

Increase in Demand.

It is generally expected that the demand for copper will increase by over one-third within the next three years. Consumption for 1924 is estimated at about 1,370,000 tons, exceeding that of the record year 1918 by a few thousand tons. But when Europe's industrial activities have been restored, it is calculated that the world's demand for copper will rise to almost 2,000,000 tons, or over 500,000 tons above the record production of 1917. The prospective demand is based on the assumption that Europe will increase her consumption in the same proportions as other non-European countries have already done. Between 1913 and 1923, countries other than European increased their consumption by 81%, while within the same period the quantity of the metal absorbed by Europe declined by 36%. If European consumption had increased at the same rate as non-European, it would have last year accounted for 96% of the world's production. There is thus a potential shortage of upwards of 750,000 tons in European consumption, which will have to be made good within the next few years.

Europe, it must be remembered, is still the greatest industrial area in the world, having a population four times as large as that of industrial America. Moreover, there is even greater scope for big electrical developments on the Continent than there is in the United States. Consequently the prospects of increased copper consumption by Europe are very favourable.

The Outlook.

Enough has been said to indicate that the outlook for copper producers is distinctly favourable. Consumption has been increasing, surpassing the rate of expansion in the output, and so far as can be foreseen is likely to continue to expand more steadily than any possible increase in output. In the first nine months of 1924 the world's total production according to the American Bureau of Metal Statistics was 1,082,500 short tons, or an average of over 120,000 tons a month. On the other hand consumption is calculated to have been nearly 128,000 tons a month. Consumption for the final quarter of the year should be up to the average of the first three, for while American consumption may show some temporary falling off, that of foreign countries may be reckoned upon to increase, especially as Germany has been placed in possession of foreign currency which she can apply to the satisfaction of her copper requirements. Germany was, in pre-war days, the largest European consumer of copper, and looks like becoming so again if her industries are rehabilitated under the Dawes plan. In England, too, there is every prospect of increased consumption in view of the various railway and other electrification schemes projected, not to mention requirements arising from an intensive housebuilding campaign.

On the other hand, the prospects of increased production, except, perhaps, in the Belgian Congo region, are not at all favourable. Indeed, it may be taken for granted that the world's output will fail to keep pace with the demand. That being so, an appreciation in the market value of the metal can hardly be avoided.

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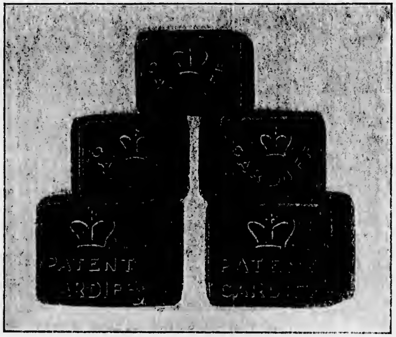

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Section VI.

TIN.

TIN.

WHAT ARE THE PROSPECTS OF TIN IN 1925 ?

Fresh supplies will show a moderate increase, but this will be counterbalanced by the using up of old stocks.

American consumption may show some falling off from the recent high level, but European countries are likely to take more.

We look for fluctuations between £200 and £350, with the possibility of a still higher price.

TIN.

After being £233 15s. 0d. per ton at the end of 1923, the price per ton rose rapidly in the first two months of this year and reached its highest point on March 12th, when the spot quotation touched £297 10s. 0d., and the metal sold in New York at parity of over £300 per ton. A sharp reaction followed and the lowest price of the year, £201, was reached on May 23rd. By the middle of November it had recovered to about £260.

Comparison in previous years is shown below :—

	1919.	1920.	1921.	1922.	1923.	1924.
	£	£	£	£	£	£
Highest	344¾	419½	210¼	187½	240	297½
Lowest	203½	195	148¼	139¼	175¾	201
Average	257½	297	165⅜	159½	217¼	—

Prices of Standard Tin.

The course of prices month by month since the end of 1923 has been as under :—

	Mean Spot Price at end of Month. £	s.	d.	Monthly Average. £	s.	d.
December, 1923 ..	233	15	0 ..	235	2	3
January, 1924 ..	253	10	0 ..	246	17	11
February, ,, ..	288	5	0 ..	272	11	2
March, ,, ..	254	0	0 ..	277	11	3
April, ,, ..	236	10	0 ..	251	0	1
May, ,, ..	208	5	0 ..	218	13	0
June, ,, ..	226	5	0 ..	219	6	8
July, ,, ..	248	0	0 ..	233	9	2
August, ,, ..	254	0	0 ..	254	15	4
September, ,, ..	239	10	0 ..	243	13	1
October, ,, ..	258	17	6 ..	248	13	6

Tin Production: Federated Malay States.

Malaya is by far the largest tin producer in the world, being responsible at the present time for some 50,000 tons of the metal. The bulk of this is produced in the Federated Malay States, whose output in 1923 amounted to 37,643 tons. This, it is true, is small in comparison to the record production of 51,733 tons in 1904, but shows a considerable advance since 1921, when the output fell to 34,490 tons. The recuperative power of the industry has been only possible by constant evolution in working methods. It is only since the war that the development of dredging on a big scale has taken place. To-day, probably between 40 and 50 per cent. of the tin is obtained by mines worked on the European system, and the proportion is likely to increase as time goes on. The success of the dredging and sluicing propositions is such that further improvements in bulk handling and consequently cheap production must result from the extension of the system. There is a scheme for the installation of a great generating station on the Perak River at Enggor, for which it is claimed that it will enable power to be sold at a considerably lower cost than at present. With the use of extensive transmission lines it should be possible to re-work areas which are no longer payable propositions with hand labour. Whether this scheme succeeds or not, it is certain that, given the capital to instal machinery for mechanical handling of ground on a large scale, the various tinfields will continue to produce for many years to come. The possibilities of lode mining in the hill districts are also considerable. Recent discoveries in the State of Johore have opened up the possibility of several hundred acres proving suitable for dredging operations.

For the success of the tin-mining industry in the Federated Malay States, much credit is due to the wise and efficient manner in which its interests are safeguarded. Since the war there has been only one occasion on which these interests seemed to be threatened by adverse legislation. Some two years ago a suggestion was put forward that the rate of increase in the sliding scale, which is at present regular, should be raised when tin advanced above £220 per ton. It was realised, however, that this proposal was calculated to check the influx of capital into the industry and, following protests, it was dropped. The present level of taxation is regarded as quite fair, and the security under which mining enterprise is carried on as well as the absence of industrial troubles have an important bearing on the regularity of production. The solicitude shown by the administration during the crisis of 1921 when the Government bought tin which had become unsaleable, and by means of the famous Bandoeng Agreement secured the pooling of the surplus stocks, is fresh in memory. This intervention has been so completely successful as to leave no doubt that it would be repeated should similar circumstances again arise.

As shown by the report of the Acting Senior Warden of Mines, 1923 was a most satisfactory year for the tin mining industry. Especially gratifying was the progress made in the installation of tin-winning machinery. The cost of a bucket dredge has been halved, partly as a consequence of building by local firms, and is now £40,000 instead of £80,000. The output from bucket dredges increased in 1923 by nearly 7% and amounted to 22% of the total output of the Federation. Good progress also was made in the difficult matter of the disposal of tailings. The great rise in the price of tin towards the end of the year induced great activity amongst the miners and many new mines were opened. The labour force employed at the end of the year amounted to 96,662 persons, showing an increase of 17·51% on the figures at the end of the previous year, by far the largest increase being in hydraulic and lampan work. Wages, although advanced somewhat by the higher price of tin, are still low.

The proportion of the output from European managed mines continues to increase, amounting in 1923 to 44·3%, against 38·1% in 1922, and of this percentage just half was obtained by bucket dredges. The whole of the improvement was in the State of Perak, both Selangor and Pahang showing decreases in the output on the year. An interesting point mentioned in the report is that it has been found possible to utilise rubber instead of manganese steel for the tailings distributors on the dredges, thus finding a fresh outlet for a local product.

Production of Tin in Federated Malay States.

(Estimated at 70% of concentrate shipped to smelters.)

LONG TONS.

	1920.	1921.	1922.	1923.	1924.
	Tons.	Tons.	Tons.	Tons.	Tons.
January ..	4,265	3,298	3,143	3,188	3,934
February ..	3,014	3,111	2,572	3,020	3,246
March ..	2,770	2,190	2,839	2,704	3,364
April	2,606	2,692	2,896	2,793	3,327
May	2,741	2,884	3,104	3,108	3,852
June	2,940	2,752	2,909	3,053	3,493
July	2,824	2,734	3,086	3,269	3,735
August ..	2,786	3,051	3,001	3,381	3,539
September ..	2,734	2,338	2,890	3,026	3,656
October ..	2,837	3,161	2,837	3,447	3,949
November ..	2,573	2,800	2,867	3,341	—
December ..	2,838	3,479	3,144	3,313	—
	34,928	34,490	35,286	37,643	36,095 (10 months)

Bolivia.

Bolivia is, undoubtedly, the greatest potential source of increased tin production, and the possibilities of that country, therefore, call for careful examination. Unfortunately, statistical information of a reliable nature is difficult to obtain, and among other uncertain factors not the least is that of political instability. Moreover, the profits tax may, unless it is modified or repealed, have the effect of deterring capital. But as to the richness of the tin producing mines there is abundant evidence, and a great deal of development work has been done in recent years, the fruits of which should be seen in a greatly increased output in the near future. The Guggenheim group are estimated to have spent about £3,000,000 on acquiring and opening up the Caracoles mine. Development has been active on lodes extending for three miles, and it is stated that over 250,000 tons of 4% ore have already been blocked out. There is a new mill capable of treating 60,000 tons of ore yearly.

The Araca mine, which has reconstituted its milling plant, is expected to increase its output from 4,000 quintals to 10,000 quintals monthly. Another company which has reached the milling stage is the El Salvador, while the Oploca mine is steadily increasing its output. The last named company recently ran an adit below the previous bottom of the mine which drained the water and enabled an important amount of development work to be done, revealing over 100,000 tons of richer ore than in the levels above.

Apart, therefore, from the older and better-known mines, such as Llallagua, the Aramayo Mines, Uncia and others, these four properties, Caracoles, Araca, Salvador and Oploca, are expected to give, when working regularly, an increase of nearly 15,000 tons of concentrates annually. A large increase on the 1923 shipments of 28,682 tons is, therefore, indicated. Some, indeed, consider it possible that Bolivia will eventually become the largest tin producer in the world. At present she ranks second.

The following table shows how the fluctuations in the Bolivian output have corresponded with those in the market price of the metal.

Year.	Barilla. Metric Tons.	Tin Contents. Metric Tons.
1906	28,370 ..	17,624
1907	27,678 ..	16,607
1908	29,938 ..	17,693
1909	35,566 ..	21,340
1910	38,548 ..	23,129
1911	37,073 ..	22,434
1912	38,378 ..	23,027
1913	44,594 ..	26,355
1914	37,259 ..	22,355
1915	36,324 ..	21,794
1916	35,097 ..	21,145
1917	46,420 ..	27,858
1918	48,801 ..	29,281

Year	Barilla. Metric Tons.	Tin Contents. Metric Tons.
1919	45,648	27,389
1920	49,237	29,542
1921	29,497	17,698
1922	53,539	32,132

Dutch East Indies.

The supply of Banka tin is understood to have been about 3,000 tons more than the 18,000 tons shipped during 1923. Large stocks of tin material have been shown in the Banka reports of the last two years, and it is quite likely that the policy of reducing these has been proceeded with, no extra mining being necessary to provide the increased supply. Banka sales during the first quarter of 1924 amounted to 5,136 tons, a considerable advance on the same period of 1923, which totalled about 4,000 tons. The Billiton Company is understood to have embarked on a policy of lode mining, which has been under consideration for some time past, in which case the Company would not need to draw so heavily on its alluvial resources.

Nigeria.

Stimulated by the high price of the metal, Nigerian tin production underwent a remarkable expansion in 1923. Statistics quoted by *The Mining Journal* place the output for the year as high as 8,372 tons, or not far short of the top figure recorded in 1918, which was 8,434 tons. These totals, it will be seen, are considerably in excess of those given by *The Mining Magazine*, upon which our usual table is based. The latter are taken from the returns of individual Companies reporting in London, and probably represent 85% of the actual outputs. There is reason to believe that the total production for some years past has averaged 8,000 tons of black tin per annum, which was about the pre-war average of the Cornish mines.

Nigeria's output is regulated very largely by the available supply of labour, while the limited supply of water during the greater part of the year severely restricts the use of dredges and hydraulic plants. Owing to the limited amount of prospecting and development work that has been done, the duration of the tinfields and the expansion of the existing industry are matters of uncertainty. A close study of the geological formation of the plateau tinfields, however, indicates that rich alluvial deposits may occur not only in the present stream beds and banks, but also on the watersheds, on the valley slopes, in buried channels and in ancient river beds. The correctness of this theory will, doubtless, be tested as time goes on by practical development work.

Much also remains to be done in the way of reworking by machinery areas already dealt with by hand labour. Under the old conditions only the richer patches were worked out, so that there are available, not only the low grade heaps left over from the earlier operations, but also the ground upon which they were dumped. The whole of this material could be profitably treated by suitable plant.

Nigeria has hitherto suffered from lack of suitable fuel for power, but hopes are entertained that the development of Udi Coalfields will help to remove this disadvantage. On the completion of the Eastern Railway, in 1926, it is expected that Udi coal will be available on the tinfields at a cost of £2 per ton. The hydro-electric scheme of the Bauchi Company is mainly for the purposes of that undertaking, but it may not require the whole of the power which will ultimately be available.

In 1923 there were 64 companies and 47 individual working parties holding nearly 494,000 acres of ground, mainly on the Bauchi plateau. The total amount of tin won gave an average of 1·32 cwts. per acre of ground held, and 9·18 cwts. per head of labour employed. The average working costs in 1923, including royalties, freights, returning charges and London expenses, was about £102 per ton, while the average price obtained for tin ore was £136, showing an average profit of £34 per ton of concentrates. A large number of producers contribute to the total output, the most important being the Ropp with a production, in 1923, of 1,394 tons. This represented a falling-off of some 60 tons, but several of the smaller producers more than made good the deficiency.

Nigerian Tin Production.

(In long tons of concentrate and unspecified content).

	1919.	1920.	1921.	1922.	1923.	1924.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
January ..	613	547	438	503	553	749
February ..	623	477	370	443	550	655
March	606	505	445	508	560	519
April	546	467	394	477	547	494
May	483	383	337	485	500	476
June	484	535	423	509	525	557
July	481	484	494	467	549	650
August ..	616	447	477	467	671	652
September ..	561	528	595	492	644	696
October ..	625	628	546	535	664	—
November ..	536	544	564	591	738	—
December ..	511	577	555	598	721	—
	6,685	6,022	5,618	6,075	7,222	5,448 (9 months)

Other Fields.

Thanks to the better price prevailing for tin there was a notable revival in Cornish mining during 1924. A considerable amount of development work was accomplished, especially by the Geevor, East Pool, and Agar and South Crofty Companies, and there was a substantial improvement in the output of tin, the three Companies mentioned reporting a total of 705 tons in the first half of the year. Provided the price of tin is maintained, Cornwall should regain some of the importance which it formerly possessed as a producer of the metal.

Attention has been directed to the possibilities of Portugal as a tin producer, by the flotation of a Portuguese tin dredging company on the London market, formed to work concessions in the Guarda district. For many years past the alluvial deposits in the province of Beira Baia have been worked by hand, and in 1914 operations were started by a Portuguese American Company. Dredging with a bucket dredge, the Company's recovery per month is 50 to 60 tons of 70% tin concentrates, which indicates an extraction of 2 to 2½ lbs. per cubic yard worked. More than 450 tons of metal are exported from the province annually, while 320 tons of metal yearly are smelted in Portuguese plants and used in the country.

Tin Consumption.

America is estimated to consume about 60% of the world's output of tin, and in considering the future of the metal, the economic position of that country is, therefore, of first importance. In recent years the manufacture of tinplate in the United States has expanded with remarkable rapidity, last year's American production having exceeded that of the whole world in 1910, while in the meantime the output of tin itself has been practically stationary. Last year's exports of tinplates from the United States were 123,470 tons, comparing with 76,629 tons exported in 1922, and the high record of 258,538 tons in 1918 (due to war conditions).

Deliveries of tin constitute the best available, though only an approximate, guide to world consumption. In the pre-war years, 1910-14, consumption estimated on this basis ranged between 107,000 and 120,000 tons and averaged 112,000 tons. Since the war consumption has ranged from 75,000 tons in 1921 to the high record of 130,000 tons in 1923. In the first eight months of 1924 consumption—measured as before by deliveries—showed a falling off of over 10,000 tons. While deliveries in February and April were exceptionally large, there was a marked contraction in the American demand from July onwards, and until the end of September there were no signs of the usual autumn demand. This, however, began to develop in the earlier part of October, the more confident feeling created by the issue of the German loan leading to the hopes of a pronounced revival in world trade, and to a consequent increase in the consumption of metals used in industry in countries other than the United States. The result of the Presidential election also helped to stimulate confidence in the trade outlook.

Tin Prospects.

The prospects of the tin industry, regarded from the point of view of either producers or consumers, are so clearly bound up with the success or failure of the Dawes plan for rehabilitating German trade that any prediction as to the course of prices must depend upon the views we take of this experiment. It is, we think, fair to assume that with the flotation of the international loan the immediate object of preventing a return to currency inflation in Germany has been accomplished, and that other European countries will gradually divest themselves from similar tendencies and will return to a sound money policy. This will make for healthier conditions in international trade, though not necessarily for an immediate increase in prosperity. As the result of an improvement in the purchasing power of Germany and other European countries, we look for an increase in the consumption of tin in industry, and it is conceivable that the growth of demand during 1925 will be very rapid, if all goes well with the plans of the experts. As compared with a year ago we have the definite gain that the problem of European reconstruction is being tackled as a business proposition and not as a mere adjunct to politics. Consequently there is more genuine cause for optimism with regard to the future of trade.

But, as we have shown elsewhere, America accounts for about 60% of the world's consumption of tin, and the future of the metal rests mainly upon the continuance or slackening of the demand from that quarter. In the past year the boom in the American tinplate industry underwent a slight setback, as might have been expected in the year of a Presidential election, but there is no reason to suppose that the tide has definitely turned. Whether the economic situation of the United States is as strong as appears on the surface is a very difficult question to answer, the enormous accumulation of gold by that country being far from an unmixed blessing. American participation in the German Loan, however, has provided one very good reason for greater activity in trade between these two countries. In all probability the United states will continue to take more than half the world's production of tin, while Germany, which before the war was the third most important buyer of the metal, should gradually return to that position.

Summarising the outlook for consumption, we think the balance of probability is in favour of further growth, though, as always, political factors may intervene to upset views based upon purely economic considerations.

A year ago we pointed out that at anything over £220 per ton the unsold pool stocks would come forward freely. This has happened, and the bulk of these stocks has now been liquidated, though the process has been rather slower than was expected. At the end of October the world's visible supply of tin was about 18,000 tons. In the twelve months ended 31st October, deliveries of tin at 104,000 tons were about 1,000 tons more than supplies. During this period the Eastern pooled surplus was materially reduced. To the end of October the Federated Malay States Government had sold, under the Bandoeng Agreement, 7,725 tons, leaving an unsold balance of only 2,337 tons. The parties to the Bandoeng Agreement can be congratulated upon the success of their policy which, while primarily designed to assist the mining industry in the Federated Malay States and the Dutch East Indies during a severe crisis, has resulted in handsome profits to all concerned, thanks to the policy of liquidating these stocks gradually.

It must be remembered that the deficiency in current production as compared with consumption during the past two years, has amounted to some 12,000 tons a year, which has been met out of the Bandoeng pool and the liquidation of other invisible stocks. As the bulk of these has now passed into consumption it would seem that we are faced with a somewhat pronounced shortage of the metal unless production is increased to the extent of some 10,000 tons yearly. This may be regarded as a possibility, though by no means a certainty. The Federated Malay States tin output, which is always the most reliable guide, shows an increase of some 5,000 tons over 1923. Siam and other fields, which send their ore to the Straits Settlement for smelting, should show a moderate increase. Bolivia should greatly improve upon the 1923 figures. As regards the Dutch East Indies some reduction on the 1923 figure is looked for. If, as is supposed, the Billiton output is 4,000 to 5,000 tons less than in the previous year, this would go far to nullify the increase from other sources in the Middle East. Nigeria's increase may be estimated at 500 tons, and probably the Congo may contribute more. South Africa and Portugal are potential sources of supply which have hitherto not figured largely in calculations of output. Cornwall should have done much better, the gain over the 1923 production being estimated at 1,500 tons. In view of the internecine disorders China cannot well be an increased source of supply and may even fall below the level of recent years.

We find it difficult to improve upon the following estimate of the outlook for tin given by Mr. C. V. Thomas, Chairman of the Tronoh Mines, after a visit to Malaya. "It is probable," he said, "that there will be a moderate increase in the output of Federated Malay States and Bolivia, but I anticipate the increase in Bolivia will be gradual, and that, with improving world conditions, the world's consumption should easily absorb such increase in production. The outlook for tin is quite hopeful. The price is likely to remain a good one, and granted peace and quiet in the world, and especially in Europe, the price might rise appreciably beyond present figures."

Taking all the known factors into account, it is doubtful if production can be stimulated to such an extent as to make good the deficiency represented by the using up of old stocks. And as consumption seems likely to grow steadily there is every reason to look for a continued strong market for the metal. We estimate the probable range of prices at £200 to £350 per ton, but are not prepared to say that the effects of speculation, to which the tin market is especially susceptible, will not cause fluctuations above and below these extremes.

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Section VII.

TINPLATES.

TINPLATES.

WHAT ARE THE PROSPECTS OF THE TINPLATE INDUSTRY IN 1925 ?

The present slight depression in the Tinplate industry will only be of short duration.

Everything favours an expansion in the World's markets for Tinplate in 1925.

Demand over 1925 will again reach a high level and prices remain firm at not below the present minimum of 23/6 per standard box.

TINPLATES.

Until quite recently the bright spot in South Wales industries was that which is situated within the small belt of sea coast running from Port Talbot to Llanelly. Here the British tinplate industry has its home, and it is within this twenty miles of sea coast that the manufacture of tinplates is chiefly carried on. During the major portion of the year the works have been operating at practically full capacity, and, in addition, there has been a shortage of skilled labour.

A slight depression has, however, manifested itself in the industry during the past month or so, and at the time of writing several of the tinplate firms in and around Swansea are working part time owing to lack of orders. Some of the works are holding large stocks. Welsh tinplate manufacturers have therefore adopted a policy of closing their works for brief periods in turn, but there has been no dismissal of men.

The healthy state of the industry in this country is due to a variety of factors, including the Stabilisation of Prices Scheme, the excellent relationship existing between employers and employed, and the expanding demand for the commodity.

Tinplates find a world wide market, and are used chiefly in the canning industry. Large quantities are also used in making oil, paint and petroleum drums, in the manufacture of motor car bodies, and in toy making. Tobacco containers and many household utensils are made from tinplates, whilst some of the lighter brands are used for advertisement plates, etc. Ternplates are used extensively abroad for building construction, especially roofing. In Lancashire, ternplates are utilised for packing dry goods for export.

World's Production.

Up to the year 1910, this country was the largest producer of tinplates in the world. Since that year the United States has been the largest producer, and, to-day, has a productive capacity of double that of the United Kingdom. These two countries are the principal producers of the world, the contribution of the other countries being negligible in comparison. There can be no doubt, however, that in time every country with an iron and steel industry will have its complementary tinplate mills.

In the absence of official figures, the following table gives an approximate idea of the distribution of production :—

World's Productive Capacity.

	TONS.
United States ..	1,750,000
United Kingdom ..	1,000,000
Germany	100,000
France	40,000
Italy	30,000
Spain	20,000
Norway	12,000
India	5,000
Other Countries ..	43,000
Total	3,000,000

The United States.

The growth of the tinplate industry in the United States has been extremely rapid. Commencing in 1891, under protection of the McKinley Tariff Act, the United States produced in that year 999 tons of tinplates. In 1901 her production reached 399,291 tons, and in 1910 this had been practically doubled, the actual figures being 722,770 tons. From 1910 to the outbreak of the war in 1914, the increase in production was maintained. During the war, when abnormal conditions prevailed, the United States supplied most of our foreign markets and her production consequently increased by leaps and bounds. The peak was reached in 1917, when 1,544,000 tons were produced. Following the termination of the war and the consequent restoration of our own industry

to more normal activity, American production declined. But the decline, which reached its lowest point in 1921 of 793,198 tons, was only temporary, for in 1922 all previous records were broken, the production in that year having reached 1,631,241 tons. The following table shows the United States tinplate position each year since 1907.

U.S.A. Tinplates Position.

(GROSS TONS).

Calendar Years	Production.	Add Imports.	Deduct Exports.	Approximate Consumption.
	Tons.	Tons.	Tons.	Tons.
1907	514,775	57,773	10,203	562,345
1908	537,087	58,490	11,878	583,699
1909	611,959	62,593	9,327	665,225
1910	722,770	66,640	12,445	776,965
1911	783,960	14,099	61,381	736,678
1912	962,971	12,653	73,381	902,243
1913	823,719	21,815	47,274	798,260
1914	931,250	15,411	59,615	887,046
1915	1,080,000	2,305	154,541	927,764
1916	1,204,500	1,008	227,390	978,118
1917	1,544,000	124	233,300	1,310,824
1918	1,473,939	32	258,538	1,215,433
1919	1,150,898	224	204,524	946,598
1920	1,436,686	377	215,000	1,110,350
1921	793,198	862	107,487	901,547
1922	1,631,241	2,773	76,629	1,657,385
1923	1,507,000	10,033	123,470	1,393,563
1924 (8 m'ths)	—	915	112,808	—

Although America received a serious set-back in her foreign business in 1921 as a result of the United Kingdom regaining the bulk of her export trade, the figures for 1923 show a considerable improvement over both the preceding years, 123,470 tons having been exported. Statistics for the eight months ended August, 1924, which are the latest available, show that whereas 71,330 tons were exported in the first eight months of 1923 the figures for the corresponding period in 1924 are 112,808 tons.

The following table shows the exports of tinplates and ternplates from the U.S.A. monthly for the first eight months of 1924, by countries of destination.

Exports of Tinplates and Ternplates from the U.S.A., monthly for first eight months of 1924.

Country. of Destination.	Jan.	Feb.	March	April.	May.	June.	July.	Aug.	Total 8 M'ths.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Canada	1,983	2,309	2,470	1,756	2,642	1,839	1,511	1,910	16,420
Japan	13,329	4,585	729	327	1,143	285	3,176	1,526	25,100
Argentine	2,568	1,619	259	167	756	448	650	281	6,748
Uruguay	99	9	3	10	78	43	48	56	346
China	3,533	4,805	3,370	1,554	7,022	2,519	131	50	22,984
British India ..	..	4,040	..	..	3,924	848	247	245	9,304
Chile	349	29	763	28	33	231	33	291	1,757
Cuba	512	222	637	154	391	980	262	426	3,584
Mexico	132	550	389	269	413	267	235	496	2,751
Hong Kong ..	664	1,987	809	12	2,585	48	46	174	6,325
Italy	272	876	568	667	394	864	54	244	3,939
Other Countries ..	2,001	822	2,905	980	2,600	1,859	1,426	957	13,550
Total 1924 ..	25,442	21,853	12,902	5,924	21,981	10,231	7,819	6,656	112,808
Corresponding Period, 1923 ..	5,894	5,609	7,028	13,391	13,328	6,966	13,029	5,995	71,330

America's home requirements absorb the bulk of her production, the chief consumer being the canning industry. An American estimate of the steel consumed in the manufacture of tinplates during the year 1923 furnishes the following interesting facts:—

Consumption of steel in manufacture of tinplates used for making up into containers (principally food)	960,000 tons.
Consumed in manufacture of tinplates used for other purposes	465,000 ,,

Economic stabilisation in the European countries has had a beneficial effect on the American canned foods industry. Increases have been reported in the consumption of evaporated and condensed milk, salmon, sardines, canned vegetables and canned fruits. The European countries take a large quantity of these products and the rehabilitation of Germany will further augment the demand. The total exports of canned foods from the United States for the first six months of 1924 were 276,024,501 pounds, representing an increase over the corresponding period of 1923 of 23·6%.

The current year's prospects are good, and heavy buying of tinplates for canning purposes is taking place. The expanding motor car industry will also help to swell consumption.

The United Kingdom.

There are no official figures available of the annual production and home consumption of tinplates in this country, but authoritative estimates place the home consumption of tinplates, ternplates, and blackplates for 1913 at 255,790 tons. The official export returns for that year were 566,272 tons, giving an approximate total production of 825,000 tons. This output was obtained from 82 works with 581 mills working.

On the termination of the war the number of mills in operation was only 255—less than half the productive capacity. Although checked in 1921 through trade depression and the coal strike, there has been a gradual improvement in the number of mills in operation, and in June of this year 423 mills were working at full capacity, this being the highest figure recorded since the war.

Number of Tinplate Mills in operation in the United Kingdom.

END OF MONTH.	1921.	1922.	1923.	1924.
January	157	334	385	408
February	106	329	392	408
March	77	334	392	415
April	35	344	399	420
May	10	357	400	416
June	—	366	410	423
July	177	367	405	418
August	226	369	395	413
September ..	256	363	391	412
October	285	360	414	—
November	341	375	410	—
December	342	383	413	—

Welsh tinplates find a market in every part of the world and the bulk of the production is exported. Home requirements, with the exception of the year 1921, when the figure was just over 101,000 tons, have absorbed roughly 220,000 tons annually. The home consumption in 1923, however, showed an appreciable increase, the estimated figure being 357,371 tons.

The following table shows the production and exports annually since 1900.

United Kingdom Tinplate Production and Exports.

Year.	Production. (A)	Exports.	Year.	Production. (A)	Exports.
	Tons.	Tons.		Tons.	Tons.
1900	401,520	334,085	1912	781,740	481,123
1901	427,360	316,928	1913	750,280	494,497
1902	482,335	369,426	1914	635,370	435,497
1903	529,765	338,460	1915	610,880	368,602
1904	536,470	359,634	1916	587,040	321,710
1905	569,760	354,864	1917	386,530	177,383
1906	600,060	374,802	1918	449,910	223,509
1907	632,460	405,328	1919	519,460	289,761
1908	638,900	402,864	1920	610,763	353,017
1909	677,240	439,747	1921	327,800	226,482
1910	721,520	487,981	1922	673,264	448,907
1911	749,540	484,331	1923	808,495	551,124

(A) Estimates.

Exports of tinplates in 1923 amounted to 551,124 tons—the highest on record. Notable increases in our exports took place to South America, 27,023 tons, as compared with 17,755 tons in 1922; China, 29,554 tons, against 10,203 tons; and Japan, 37,648 tons as compared with 17,285 tons in 1922. Australia, one of our chief markets, took 42,369 tons or an increase of nearly 5,000 tons.

The following table shows the exports of tinplates from the United Kingdom monthly for the last three years :—

MONTH.	1922.	1923.	1924.
	Tons.	Tons.	Tons.
January	34,275	42,156	51,704
February ..	34,802	46,690	44,962
March	38,847	47,671	46,137
April	36,055	41,015	49,542
May	39,455	54,059	60,480
June	37,134	50,281	50,809
July	40,809	39,993	46,867
August	36,817	41,798	40,821
September ..	35,258	38,725	42,492
October	35,087	51,398	—
November ..	38,833	55,552	—
December ..	43,025	41,786	—
Total for Year	448,907	551,124	433,814

From the foregoing it will be seen that the 1924 exports for the first nine months are well in excess of those of the previous year. All previous records were broken in May, when 60,480 tons were exported. The total of 433,814 tons for the first nine months represents an annual figure of approximately 578,418 tons and there is every indication that the year's exports will not be far short of this figure. This would represent an increase over the record year of 1923 of roughly 26,000 tons.

It is interesting to note that of the 433,814 tons exported during the current year, 30% went to European countries and 17% to the British India and the Far East; while Australia took in the neighbourhood of 11%. Canada (including the United States) and South America each took about 6%.

Australia and South America are increasing consumers of tinplates and there is keen competition between this country and the United States for the business in these markets. We are aided in the Australian market by special tariff concessions, but in South America the United States is making considerable progress although the major portion is still supplied by us.

It is generally admitted by both merchants and manufacturers that the Stabilisation of Prices Scheme has been the salvation of the tinplate industry during the last couple of years. This scheme was put into operation late in 1922, following a joint meeting of the Steel makers and Tinplate manufacturers which was held to investigate the unsatisfactory position of the industry. The scheme resulted in an agreement being entered into between the South Wales Steel producers and Tinplate manufacturers working about 95 per cent. of the available mills, whereby a rebate of 7/6 per ton on tinplate bars was allowed the manufacturers in return for which they agree not to sell their commodity below a fixed minimum. The scheme proved successful and has been in operation ever since, the state of the market being periodically considered and the minimum price fixed accordingly.

Considerable interest was aroused early in the year by the formation of a combine controlling about 60 per cent. of the Welsh tinplate production. A number of important merchant firms were brought under one control, and a central selling agency set up for the marketing of the product of some 200 mills merged in Richard Thomas & Company and the Grovesend Tinplate Company Limited. In addition to the central agency in London, sub-agencies are being set up in some of the European countries. By this means it should be possible to effect a reduction in the distributive expenses and so be in a position to compete more favourably for a larger share of the world's business.

Prices.

The market closed in December, 1923, with the minimum schedule price at 23/6, but prices were a little higher and 24/- was invariably quoted. From the beginning of the year to the end of May the minimum price remained at 23/6, but quotations, after some weeks at round about 24/-, rose in March, when the highest reported was 25/3. Buyers having covered their requirements for the first half of the year, prices dropped to round about 23/7½ at the end of May. At this time the Stabilisation of Prices Committee lowered the minimum to 22/7½ and sales were effected from then on to the middle of August at slightly above the minimum, with a slackening tendency during July. On the 19th August the Stabilisation Committee decided to advance the minimum price to 23/- and a fortnight later a further advance to 23/6 took place, at which figure it stands to-day.

Other Countries.

It is difficult to obtain reliable statistics as to the present productive capacity of Germany, but it is known to have been doubled just prior to the war. The German works were reported to be taking orders at less than the Welsh basis price in order to keep her mills in order. The per capita output in the German Iron and Steel industry is stated to be almost equal to pre-war, and with the long working hours and the low wages obtaining it is possible that the output during the coming year will show an appreciable increase.

There has not been any great increase in the output capacity of France, and her imports continue to be high.

The tinplate works established near Bergen, in Norway, during the war, have not been a successful proposition so far, in spite of assistance from the Government. Stravenger fish canners, whose business is at the present moment experiencing a boom, are reported to have come forward with offers of financial assistance. The canning industry in Norway depends upon foreign supplies of tinplate, and an effort is being made to produce a portion of the home requirements. The works have an annual capacity of 200,000 boxes.

In India interesting developments are taking place. The Indian steel industry has persuaded the Government to protect its interests against foreign competition in the form of the Steel Industries (Protection) Act, 1924. This is another step towards the realisation of the huge expansion scheme of the Tata Iron and Steel Co. Ltd., to make India self-supporting in iron and steel manufactures.

The importance of this step as far as the tinplate trade is concerned lies in the fact that all imported tinplate into India will henceforth be subject to a tariff of 60 rupees (£4) per ton. The Tinplate Company of India Ltd., a subsidiary company of the Tata Iron and Steel Company Limited, which was opened in 1923, has a capacity of 30,000 to 33,000 tons of blackplate annually, but it must necessarily take this Company a year or two to establish its works. So far as the year 1925 is concerned the Indian demand for British Tinplate is not likely to show any marked decrease. It is anticipated that other things being equal, competition will be very keen in this market between the United Kingdom and the United States. Although the latter's exports to India are small in comparison with our own, yet she is making considerable progress.

Imports of Tinplates and Ternplates into British India.

Exporting Country.	First Eight months, 1923.	First Eight months, 1924.
	Tons.	Tons.
United Kingdom ..	36,519	28,582
United States	2,913	9,304

The Japanese consumption of tinplates is normally in the neighbourhood of 100,000 tons annually, the greatest volume being used in the petroleum and canning industries. In 1923, the United Kingdom supplied Japan with 37,648 tons and the United States contributed 37,993 tons. The first sales of tinplates from the Japanese Yawata Works were made in July, 1923. For the succeeding nine months 15,760 boxes were marketed, of which 65% was of the first grade. It is planned to roll 10,000 tons of blackplates annually and of this quantity 7,000 to 8,000 tons will be tinplated.

It is probable that a market could be found for a larger quantity of tinplates, but the necessity of training labour in this highly skilled branch involves too many risks to attempt more at the present time. In this market, too, the United States are making inroads into our export trade.

Imports of Tinplates and Ternplates into Japan.

Exporting Country.	First Eight Months, 1923.	First Eight Months, 1924.
	Tons.	Tons.
United Kingdom ..	19,072	17,503
United States	18,034	25,100

The situation in Italy, the fifth largest producer in the world, shows no improvement in the matter of imports from this country. The canning industry in Italy has installed quite a lot of American machinery which, perhaps, accounts in some way for the increase in importations from the United States. The following shows the position of the two premier exporting countries as regards the Italian market.

Imports of Tinplates and Ternplates into Italy.

Exporting Country.	First Eight Months, 1923.	First Eight Months, 1924.
	Tons.	Tons.
United Kingdom ..	15,092	14,792
United States	2,266	3,939

PROSPECTS.

The only serious competitor of this country in the export of tinplates is the United States. The productive capacity of the United States is slightly more than double that of the United Kingdom, but America's home demand is such that practically the whole of the output is absorbed and a comparatively small margin is available for export. Again, America's canning industry is showing considerable expansion, so that the demand on the output for home consumption is not likely to show any falling off during the coming year. Unless reports from that country prove false, the present output capacity of the United States tinplate industry represents the maximum for the time being.

Aided by geographical position, and consequent lower freights, an extension of American business in the Eastern countries may be looked for and this may take place, possibly, at the expense of our own export trade. But this will be counterbalanced by an increase in the demand from European countries as a result of the gradual restoration of these countries to more normal economic conditions. The resuscitation of Germany, following the signing of the London Agreement and the putting into operation of the Dawes Scheme should react favourably on world's trade.

European countries represent about 30% of our export markets, and as far as this area is concerned the United States is practically out of it. The price of the basis box of tinplates at Pittsburgh is higher than the present Welsh minimum, and when rail charges and freights are added to this, it is clearly seen that America cannot put any quantity of the commodity on the European market at an economic price. Perhaps the only exception is Italy, and to this country go practically all the United States exports to Europe.

An expansion in our Australian and South American markets should be noticeable during the coming year.

Everything favours an expansion in world demand for tinplates in 1925. The Reparation Settlement and financial assistance to Germany, combined with stable political and economic conditions at home and abroad, make the industrial outlook generally very promising. New uses for tinplate are continually being found and the quantity required for canning preserved foods of all sorts, for the manufacture of motor cars, and transport of oil and petrol, is increasing year by year.

At the time of writing slack conditions are being experienced, and some of the mills are working part time owing to lack of orders and large stocks, but this depression will probably be of short duration. Demand over 1925 should again reach a high level, and prices remain steady at not below the present minimum of 23/6.

With the wages question amicably settled for some twelve months ahead, and machinery set up to facilitate the consideration of future minor grievances, freedom from labour troubles is almost assured.

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SUPPLEMENTARY STATISTICS.

Statistics of the Trade of the United Kingdom.

	VALUES AS DECLARED IN MILLION POUNDS STERLING.						VALUES ON THE BASIS OF 1913 PRICES IN MILLION POUNDS STERLING.					
	1913	1919	1920	1921	1922	1923	1913	1919	1920	1921	1922	1923
IMPORTS—												
Food, Drink and Tobacco ..	295	719	755	567	472	511	295	286	265	275	293	343
Raw Materials and Articles mainly Unmanufactured ..	270	607	710	271	298	325	270	254	248	175	218	218
Articles wholly or mainly Manufactured	201	296	453	244	230	257	201	137	164	118	146	172
Other Articles	3	4	2	3	3	5	3	1	1	2	2	3
TOTALS	769	1,626	1,932	1,085	1,003	1,098	769	678	678	570	659	736
EXPORTS of Produce and Manufactures of the Utd. Kingdom												
Food, Drink, and Tobacco ..	34	34	51	37	36	44	34	14	19	17	18	23
Raw Materials and Articles mainly Unmanufactured ..	66	111	145	64	102	131	66	35	31	30	63	71
Articles wholly or mainly Manufactured	414	641	1,120	589	569	580	414	235	316	210	275	304
Other Articles	11	12	18	13	13	12	11	4	6	5	6	6
TOTALS	525	798	1,334	703	720	767	525	288	372	262	362	404
EXPORTS of Foreign and Colonial Merchandise—												
Food, Drink, and Tobacco ..	16	43	46	30	22	25	16	22	25	23	17	20
Raw Materials and Articles mainly Unmanufactured ..	64	83	123	50	55	67	64	46	53	47	54	53
Articles wholly or mainly Manufactureed	30	38	54	27	27	27	30	18	21	16	18	21
Other Articles	—	—	—	—	—	—	—	—	—	—	—	—
TOTALS	110	164	223	107	104	119	110	86	99	86	89	94

IMPORTS AND EXPORTS OF THE UNITED KINGDOM

MONTH.	Total Imports.	Exports of British Merchandise.	Exports of Foreign & Colonial Merchandise.
	Value C.I.F. £(A)	Value F.O.B. £(B)	Value F.O.B. £(C)
1913 Monthly averages	64,086,163	43,788,451	9,137,976
1914 ,, ..	58,052,926	35,893,448	8,789,514
1915 ,, ..	70,991,113	32,072,371	8,255,182
1916 ,, ..	79,042,208	42,189,976	8,163,848
1917 ,, ..	88,771,367	43,775,749	5,796,020
1918 ,, ..	109,679,242	41,784,916	2,578,757
1919 ,, ..	136,296,742	66,531,081	13,693,495
1920 ,, ..	161,738,788	111,297,419	18,533,996
1921 ,, ..	90,668,491	58,599,690	8,921,006
1922 ,, ..	83,702,602	60,041,369	8,648,156
1923.			
January ..	99,699,855	76,736,869	9,797,961
February ..	83,855,165	67,333,227	9,823,323
March ..	90.022,226	60,920,690	9,085,642
April	86,417,017	62,871,102	12,428,500
May	89,479,996	71,554,864	11,773,426
June	89,307,683	62,883,559	10,954,932
July	76,818,334	59,503,850	8,799,983
August ..	88,743,197	60,103,360	6,128,781
September	83,265,581	63,836,144	8,110,443
October ..	99,914,731	71,322,931	11,146,961
November ..	101,584,990	65,768,155	10,171,110
December ..	109,189,790	64,115,189	10,396,732
1924.			
January ..	109,258,668	64,235,078	13,310,982
February ..	96,705,489	67,974,911	13,230,764
March	103,728,633	61,102,767	12,700,756
April	86,165,549	62,866,926	11,770,921
May	122,086,599	70,260,882	13,091,195
June	88,501,452	62,024,238	10,023,513
July	108,115,498	71,283,289	10,174,629
August ..	102,196,492	66,288,294	8,970,029
September ..	100,895,230	63,282,876	9,565,535
October ..	120,458,328	68,586,638	12,931,489

(A) C.I.F.—The values of the imports represent the cost, insurance and freight; or, when the goods are consigned for sale, the latest sale value of such goods.

(B) F.O.B.—The values of the exports represent the cost and the charges of delivering the goods on board the ship, and are known as the "free on board" values.

(C) These figures are also included in "Imports" and constitute Merchandise passing through the United Kingdom and destined for Foreign and Colonial consumption.

COAL STATISTICS.

PRODUCTION.

000's omitted: in Tons of 2,240 lb.

Year.	Output of World.	OUTPUT OF CHIEF EUROPEAN COUNTRIES.			
		United Kingdom.	Germany.	France.	Belgium.
	Tons.	Tons.	Tons.	Tons.	Tons.
1886	403,000	157,518	57,124	19,141	17,008
1887	430,000	162,120	59,364	20,476	18,084
1888	465,000	169,935	64,335	21,816	18,909
1889	474,000	176,917	66,260	23,469	19,551
1890	503,000	181,614	69,109	25,180	20,039
1891	524,000	185,479	72,531	25,092	19,360
1892	529,000	181,787	70,225	25,284	19,268
1893	515,000	164,326	72,665	24,768	19,098
1894	539,000	188,277	75,508	26,531	20,204
1895	568,000	189,661	77,897	27,140	20,121
1896	592,000	195,361	84,313	28,288	20,910
1897	631,000	202,130	89,592	29,849	21,147
1898	664,000	202,055	94,762	31,315	21,733
1899	723,000	220,095	100,007	31,738	21,717
1900	768,000	225,181	107,534	32,196	23,086
1901	789,000	219,047	106,795	31,126	21,856
1902	803,000	227,095	105,747	28,893	23,493
1903	881,000	230,334	114,763	33,668	23,415
1904	887,000	232,428	118,874	32,964	22,395
1905	940,000	236,129	119,353	34,652	21,506
1906	1,009,000	251,068	134,914	32,920	23,191
1907	1,114,000	267,831	140,885	35,411	23,324
1908	1,065,000	261,529	145,298	36,044	23,179
1909	1,105,000	263,759	146,306	36,441	22,806
1910	1,151,000	264,433	150,151	36,963	23,492
1911	1,174,000	271,892	157,872	37,833	22,712
1912	1,236,000	260,398	173,932	39,672	22,614
1913	1,310,000	287,412	188,091	39,413	22,492
1914	1,177,000	265,643	132,000	23,000	13,000
1915	1,169,000	253,206	144,092	19,588	13,953
1916	1,245,000	256,375	164,316	21,132	18,648
1917	1,291,000	248,473	157,921	28,459	14,667
1918	1,336,000	227,715	114,583	25,888	15,762
1919	1,154,000	229,779	105,122	21,709	18,050
1920	1,313,000	229,532	129,433	24,890	23,340
1921	1,096,000	163,251	128,145	28,511	21,457
1922	1,159,000	249,607	129,495	31,402	21,234
1923	1,280,000	276,001	61,111	37,818	22,506

The 1923 figures are subject to correction.

Coal Statistics—*continued.*

PRODUCTION.

000's omitted: in Tons of 2,240 lb.

Year.	OUTPUT OF CHIEF EXTRA-EUROPEAN COUNTRIES.					
	U.S.A. (All Coal.)	Japan.	India.	South Africa.	Australasia.	Canada.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1886	101,500	1,374	1,388	19	3,603	1,890
1887	116,652	1,746	1,564	18	3,751	2,169
1888	132,732	2,008	1,709	29	4,179	2,324
1889	126,098	2,421	1,946	49	4,563	2,373
1890	140,867	2,598	2,169	111	4,105	2,754
1891	150,506	3,169	2,329	113	5,048	3,194
1892	160,115	3,177	2,538	179	4,778	2,935
1893	162,815	3,317	2,562	673	4,360	3,378
1894	152,448	4,261	2,824	910	4,866	3,435
1895	172,426	4,767	3,540	1,247	5,017	3,106
1896	171,416	5,020	3,864	1,593	5,348	3,344
1897	178,776	5,188	4,066	1,767	5,862	3,380
1898	196,407	6,696	4,608	2,262	6,316	3,726
1899	226,555	6,669	5,093	2,064	6,425	4,397
1900	240,789	7,371	6,119	870	7,479	5.158
1901	261,875	8,885	6,636	1,465	8,112	5,791
1902	269,277	9,589	7,424	2,179	8,223	6,667
1903	319,068	9,979	7,437	2,911	8,532	7,107
1904	314,122	10,602	8,217	3,260	8,392	7,370
1905	350,821	11,818	8,418	3,837	9,080	7,739
1906	369,783	12,845	9,783	4,304	10,325	8,717
1907	428,896	13,656	11,147	5,232	11,511	9,385
1908	371,288	14,587	12,770	5,088	12,053	9,719
1909	411,431	15,048	11,294	5,428	10,096	9,376
1910	447,102	15,535	12,047	6,616	11,934	11,431
1911	443,054	17,318	12,716	6,822	12,801	10,110
1912	477,199	19,441	14,706	9,197	13,908	12,958
1913	504,525	20,919	15,486	9,824	14,900	13,495
1914	456,733	20,000	15,000	7,680	14,839	12,138
1915	475,545	21,099	17,098	7,802	13,624	11,844
1916	526,857	23,602	17,248	9,427	12,070	12,931
1917	581,560	25,937	17,920	9,773	12,265	14,047
1918	611,925	27,578	20,388	9,302	12,986	13,366
1919	546,883	30,336	21,753	10,099	12,341	13,936
1920	634,967	30,325	18,000	11,181	10,943	15,149
1921	466,619	24,103	16,923	10,166	14,664	13,341
1922	411,052	25,582	18,694	8,681	14,227	13,431
1923	571,845	24,259	18,680	10,456	15,705	14,240

The 1923 figures are subject to correction.

Coal Statistics—*continued.*

EXPORTS OF COAL FROM THE U.S.A. (BITUMINOUS) AND THE U.K.

YEAR.	FROM U.S.A.		FROM U.K.
	To Canada.	To Other Countries.	To All Countries.
	Tons.	Tons.	Tons.
1903	4,552,000	1,751,000	44,950,000
1904	4,384,000	1,961,000	46,226,000
1905	4,777,000	2,182,000	47,476,000
1906	5,357,000	2,348,000	55,600,000
1907	7,195,000	3,254,000	63,601,000
1908	6,543,000	2,558,000	62,547,000
1909	6,980,000	2,714,000	63,077,000
1910	7,567,000	3,217,000	62,085,000
1911	10,610,000	3,265,000	64,599,000
1912	10,258,000	4,202,000	64,445,000
1913	13,268,000	4,719,000	73,400,000
1914	9,119,000	4,683,000	59,040,000
1915	8,464,000	8,101,000	43,535,000
1916	12,850,000	5,641,000	38,352,000
1917	16,193,000	5,092,000	34,996,000
1918	13,017,000	6,939,000	31,753,000
1919	10,270,000	6,733,000	35,250,000
1920	14,482,000	19,908,000	24,932,000
1921	11,759,000	8,902,000	24,661,000
1922	9,775,000	1,408,000	64,198,000
1923	15,044,000	4,110,000	79,450,000
1924 1st Half	5,161,000	1,947,000	31,131,000

Coal Statistics—*continued.*

EXPORTS OF COAL, COKE AND PATENT FUEL FROM THE CHIEF PRODUCING COUNTRIES, INCLUDING FOREIGN BUNKERS.

000's omitted. English Tons.

Year.	United Kingdom.	Germany.	France.	Belgium.	U.S.A.	Japan.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Average 1886–1895	37,503	10,989	805	5,338	2,306	1,221
Average 1896–1900	51,040	16,103	880	6,345	5,099	2,466
1901	57,783	18,368	699	6,480	7,383	2,931
1902	60,400	19,512	829	6,677	6,127	2,952
1903	63,805	21,464	944	6.505	8,312	3,442
1904	65,822	22,334	1,188	6,623	8,574	2,889
1905	67,160	22,570	1,828	6,428	9,189	2,516
Average 1901–1905	62,994	20,850	1,100	6,543	7,917	2,946
1906	76,788	24,968	1,425	6,275	9,922	2,402
1907	85,188	26,241	1,206	6,241	13,153	2,922
1908	85,306	27,277	1,143	6,305	11,853	2,863
1909	86,037	29,417	1,236	6,226	12,535	2,844
1910	84,542	31,533	1,279	7,223	13,806	2,794
Average 1906–1910	83,572	27,887	1,458	6,454	12,254	2,765
1911	87,081	35,671	1,634	6,880	17,433	3,041
1912	85,843	41,353	2,332	6,839	18,149	3,440
1913	98,338	45,142	1,714	6,878	22,141	3,840
1914	80,366	33,414	911	—	17,632	3,558
1915	59,401	22,367	200	—	18,095	2,901
Average 1911–1915	82,206	—	1,358	—	18,686	3,356
1916	54,145	20,609	216	—	22,628	—
1917	48,028	18,648	230	—	24,169	2,791
1918	42,930	13,824	1,908	—	25,894	2,180
1919	50,486	8,428	608	4,033	22,435	2,001
1920	42,786	22,258	1,920	2,086	*40,035	2,130
Average 1916–1920	47,675	16,753	976	—	27,032	†2,551
1921	37,307	*26,143	*2,276	7,510	32,377	2,388
1922	86,234	*5,874	*2,681	(a)5,100	*13,905	1,691
1923	102,650	*1,455	*2,964	3,575	28,247	(a)1,562

* Excluding Bunkers. † Four Years.
The German figures for 1914-1920 are for Coal only.
The German figures from 1919 do not include Peace Treaty deliveries.
(a) Partly estimated.

SHIPPING STATISTICS.

Year	New Merchant Tonnage Launched *					Total for the World.	Vessels lost by Wrecks, Broken up, etc.
	United Kingdom.	British Colonies.	Germany.	U.S.A.	Japan.		
	Tons.	Tons.	Tons.	Tons.	Tons	Tons.	Tons.
1892	1,109,950	19,792	64,888	62,588	–	1,358,045	650,000
3	836,383	17,089	60,167	27,174	1,132	1,026,741	—
4	1,046,508	6,803	119,702	66,894	3,173	1,323,538	692,000
5	950,967	10,381	87,786	84,877	2,296	1,218,160	700,000
6	1,159,751	11,124	103,295	184,175	7,849	1,567,882	726,000
7	952,486	12,431	139,728	86,838	6,740	1,331,924	712,000
8	1,367,570	25,021	153,147	173,250	11,424	1,893,343	733,000
9	1,416,791	8,464	211,684	224,278	6,775	2,121,738	727,000
1900	1,442,471	9,563	204,731	333,527	4,543	2,304,163	752,000
1	1,524,739	28,134	217,593	433,235	37,208	2,617,539	746,000
2	1,427,558	28,819	213,961	379,174	27,181	2,502,755	740,000
3	1,190,618	34,690	184,494	381,820	34,514	2,145,631	744,000
4	1,205,162	30,965	202,197	238,518	32,969	1,987,935	721,000
5	1,623,168	10,798	255,423	302,827	31,725	2,514,922	725,000
6	1,828,343	26,042	318,230	441,087	42,489	2,919,763	762,000
7	1,607,890	46,443	275,003	474,675	66,254	2,778,088	794,000
8	929,669	34,181	207,777	304,543	59,725	1,833,286	794,000
9	991,066	7,461	128,696	209,604	52,319	1,602,000	868,000
1910	1,143,169	26,343	159,303	331,318	30,215	1,958,000	916,000
11	1,803,844	19,662	255,532	171,569	44,359	1,650,000	863,000
12	1,738,514	34,790	275,317	284,223	57,755	2,902,000	694,000
13	1,932,153	48,339	465,226	276,448	64,664	3,333,000	717,000
14	1,683,553	48,134	387,192	200,762	85,861	2,853,000	1,055,112
15	650,919	22,014	No figures available.	177,460	49,408	1,202,000	No figures available.
16	608,235	31,571		504,247	145,624	1,688,000	
17	1,162,896	94,471		997,919	350,141	2,938,000	
18	1,348,120	279,904		3,033,030	489,924	5,447,000	
19	1,620,442	358,728		4,075,385	611,883	7,145,000	
1920	2,055,624	203,644		2,476,253	456,642	5,862,000	518,595
1921	1,538,052	129,675	509,064	1,006,413	227,425	4,342,000	536,537
1922	1,031,081	62,765	575,264	119,138	83,419	2,467,000	887,812
1923	645,651	41,263	345,062	172,817	72,975	1,643,000	1,716,779

* Steamers and sailing vessels.

The figures for the World in the years 1915 to 1920 do not include the figures for Germany.

OIL STATISTICS.

PRODUCTION OF WORLD'S CHIEF OILFIELDS, 1921 to 1923.

In Tons (round figures).

COUNTRY.	1921.	1922.	1923.
	Tons.	Tons.	Tons.
United States ..	71,852,000	85,119,200	112,213,700
Mexico	29,780,000	28,272,000	22,810,000
Russia	435,100	458,150	582,700
Dutch East Indies ..	2,748,100	2,668,100	2,229,000
British India ..	1,047,900	1,183,200	1,156,500
Roumania	1,273,200	1,489,200	1,648,900
Persia	2,229,000	3,412,200	3,816,800
Poland (Galicia) ..	788,500	798,000	763,300
Peru	544,700	824,600	972,500

(Taken at 6·55 barrels = one ton).

WORLD'S PRODUCTION OF CRUDE PETROLEUM FOR PAST THREE YEARS.

(In barrels).

COUNTRY.	1921.	1922.	1923.
United States ..	472,183,000	557,630,000	735,000,000
Mexico	193,397,587	182,278,000	149,472,000
Russia	29,150,000	32,966,000	38,167,000
Persia	16,652,540	21,009,000	25,000,000
Dutch East Indies ..	16,958,105	16,720,000	15,000,000
Rumania	8,318,000	9,843,000	10,800,000
India	8,000,000	7,700,000	7,575,000
Peru	3,099,280	5,314,000	6,370,000
Poland (Galicia) ..	5,167,000	5,227,000	5,000,000
Sarawak	1,411,000	2,849,000	3,887,000
Venezuela	1,433,000	2,201,000	3,800,000
Argentina	1,747,410	3,008,000	3,250,000
Trinidad	2,334,000	2,445,000	3,087,000
Japan and Formosa	2,447,000	2,042,000	1,695,000
Egypt	1,255,000	1,188,000	1,037,000
France	392,000	476,000	500,000
Colombia	—	323,000	426,000
Germany	200,000	319,000	354,000
Canada	190,338	174,000	175,000
Czecho-Slovakia ..	—	120,000	100,000
Italy	34,400	31,000	32,000
Algeria	2,688	9,000	9,000
England	—	1,000	1,000
Others	2,652	100,000	200,000
	765,065,000	854,809,000	1,010,995,000

Figures for 1923 estimated by the American Petroleum Institute; for the two previous years, records of the United States Geological Survey.

IRON STATISTICS.

IRON ORE PRODUCTION OF PRINCIPAL COUNTRIES.

COUNTRIES.	1920.	1921.	1922.
	Tons.	Tons.	Tons.
United Kingdom	12,707,000	3,478,000	6,884,000
British Colonies	1,793,000	2,275,000	1,917,000
United States ..	68,372,000	29,380,000	47,725,000
France	13,698,000	13,871,000	20,440,000
Germany	6,259,000	5,812,000	*5,160,000
Sweden	4,446,000	6,360,000	6,102,000
Spain	4,693,000	2,561,000	2,754,000
Austria	428,000	700,000	1,095,000
Czecho-Slovakia ..	968,000	569,000	308,000
Italy	384,000	281,000	309,000
Luxemburg ..	3,645,000	2,983,000	4,417,000
Poland (excluding Upper Silesia) ..	119,000	226,000	†345,000
Russia	158,000	134,000	205,000
Algeria	1,069,000	697,000	1,029,000
Morocco	(a)	(b) 114,000	(b)220,000
Tunis .. .	400,000	259,000	545,000
Cuba (c)	883,000	130,000	445,000
China	1,466,000	1,344,000	1,071,000
Japan	200,000	20,000	(a)
Korea	447,000	‡195,000	‡88,000
Other Countries ..	365,000	(a)	(a)
TOTALS ..	122,500,000	73,000,000	102,000,000

(a) Figures not available. (b) Exports from Melilla.

(c) Shipments from Mines.

* Approximate. † Including Upper Silesia. ‡ Exports.

Iron Statistics—*continued*.

PIG-IRON PRODUCTION.

IN 000 TONS.

Year.	U.K.	Germany, including Luxemburg.	France.	Belgium.	U.S.A.	Total.
1880	7,749	2,713	1,725	608	3,835	15,630
1	8,144	2,897	1,886	625	4,144	17,696
2	8,587	3,364	2,039	727	4,623	19,340
3	8,529	3,454	2,069	783	4,596	19,431
4	7,812	3,585	1,872	751	4,098	18,118
5	7,415	3,673	1,631	713	4,044	17,476
6	7,010	3,515	1,517	701	5,683	18,426
7	7,560	4,009	1,568	756	6,417	20,310
8	7,999	4,321	1,683	827	6,490	21,220
9	8,323	4,511	1,734	832	7,604	23,004
1890	7,904	4,651	1,962	788	9,203	24,508
1	7,406	4,631	1,897	684	8,280	22,898
2	6,709	4,928	2,057	753	9,157	23,604
3	6,977	4,976	2,003	745	7,126	21,827
4	7,427	5,370	2,070	819	6,657	22,343
5	7,703	5,455	2,004	829	9,446	25,437
6	8,660	6,363	2,340	959	8,623	26,945
7	8,796	6,870	2,484	1,035	9,653	28,838
8	8,610	7,301	2,525	980	11,774	31,190
9	9,421	8,130	2,578	1,025	13,621	34,775
1900	8,960	8,507	2,714	1,019	13,789	34,989
1	7,929	7,867	2,389	764	15,878	34,827
2	8,680	8,518	2,405	1,069	17,821	38,493
3	8,935	10,018	2,841	1,216	18,009	41,019
4	8,694	10,104	3,000	1,283	16,497	39,578
5	9,593	10,988	3,077	1,310	22,992	47,960
6	10,149	12,422	3,314	1,431	25,307	52,589
7	9,924	13,046	3,590	1,428	25,781	53,768
8	9,290	11,814	3,412	1,306	15,936	41,758
9	9,664	12,918	3,632	1,632	25,414	53,260
1910	10,217	14,793	4,032	1,803	27,300	58,145
11	9,719	15,534	4,506	2,106	23,312	55,177
12	8,889	17,552	4,949	2,345	29,383	63,118
13	10,479	19,292	5,311	2,527	30,725	68,334
14	8,924	14,390	2,645	1,454	23,332	50,745
15	8,793	11,790	579	68	29,916	51,146
16	9,048	13,285	1,464	128	39,435	63,360
17	9,420	13,142	1,712	8	36,647	60,929
18	9,072	11,759	1,287	—	39,052	—
19	7,393	4,634*b*	2,376*a*	247	30,586	45,236
1920	8,007	5,467*b*	3,265*a*	1,098	36,403	54,240
21	2,611	7,379*b*	3,363*a*	861	16,544	30,758
22	4,900	8,169*b*	5,046*a*	1,569	26,880	47,014
23	7,435	—	5,190*a*	2,144	40,059	54,828*c*

(*a*) Including Alsace-Lorraine. (*b*) Excluding Luxemburg.

(*c*) Excluding Germany.

Iron Statistics—*continued.*

PIG-IRON PRICES. AVERAGE FOR THE YEAR.

Year	United Kingdom.		U.S.A.
	Cleveland No. 3. F.O.B.	West Coast Hematite.	Grey Forge at Philadelphia
	£ s. d.	£ s. d.	Dollars.
1883	1 19 10	2 9 11	19·33
4	1 16 4	2 4 11	17·71
5	1 13 6	2 2 11	15·58
6	1 10 8	2 2 3	16·40
7	1 13 0	2 4 6	17·79
8	1 12 5	2 3 4	16·21
9	1 18 2	2 14 6	15·48
1890	2 7 8	2 18 4	15·82
1	2 0 5	2 9 8	14·52
2	1 18 5	2 8 1	13·54
3	1 14 6	2 5 2	12·73
4	1 15 3	2 4 3	10·73
5	1 15 2	2 5 3	11·49
6	1 17 6	2 8 2	11·09
7	2 0 0	2 8 3	10·48
8	2 0 10	2 12 1	10·23
9	2 13 0	2 8 6	16·60
1900	3 8 1	3 18 9	16·49
1	2 7 2	2 18 7	14·08
2	2 6 10	2 19 6	19·20
3	2 6 6	2 16 8	17·13
4	2 2 10	2 13 5	13·67
5	2 6 6	3 0 5	15·58
6	2 11 3	3 7 6	17·79
7	2 15 9	3 14 4	21·06
8	2 10 5	2 19 8	15·72
9	2 9 0	2 17 11	16·13
1910	2 10 4	3 5 10	15·83
11	2 8 5	3 3 1	14·42
12	2 13 3	3 13 2	15·39
13	3 0 0	3 15 2	15·70
14	2 11 2	3 5 6	13·79
15	3 0 8	4 15 0	14·31
16	4 2 10	5 15 0*a*	20·05
17	4 17 3	6 7 6*a*	37·78
18	5 13 5	6 7 6*a*	33·18
19	7 17 9	9 5 0	30·21
1920	11 4 3	13 19 2	43·23
21	6 15 5	8 7 0	24·51
22	4 10 7	5 10 5	25·39
23	5 8 7	5 19 2	26·82

(*a*) Home (Controlled) Prices.

Steel Production of the Chief Countries.

PERIOD.	U.K.	Germany.	Luxemberg	France.	Belgium.	U.S.A.	TOTAL.
Monthly Average—	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1913 ..	639,000	1,389,000	99,000	384,000	201,000	2,521,000	5,233,000
1914 ..	652,000	1,109,000	95,000	217,000	114,000	1,900,000	4,087,000
1915 ..	712,000	951,000	82,000	89,000	8,000	2,605,000	4,447,000
1916 ..	765,000	1,114,000	108,000	160,000	8,000	3,448,000	5,603,000
1917 ..	817,000	1,129,000	88,000	183,000	1,000	3,632,000	5,850,000
1918 ..	799,000	1,157,000	72,000	148,000	1,000	3,584,000	5,761,000
1919 ..	658,000	535,000	31,000	179,000	28,000	2,805,000	4,236,000
1920 ..	756,000	632,000	49,000	242,000	102,000	3,403,000	5,184,000
1921 ..	309,000	736,000	62,000	251,000	65,000	1,601,000	3,023,000
1922 ..	486.000	749,000	114,000	367,000	128,000	2,771,000	4,615,000
1923 ..	707,000	..	98,000	407,000	180,000	2,534,000	3,926,000
1924—							
January ..	694,000		144,000	530,000	221,000	2,274,000	3,863,000
February ..	768,000	..	148,000	544,000	215,000	2,411,000	4,086,000
March	825,000	..	153,000	561,000	228,000	2,674,000	4,441,000
April	712,000	No	154,000	556,000	236,000	2,463,000	4,121,000
May	810,000	figures	149,000	586,000	246,000	1,927,000	3,718,000
June	652,000	available.	139,000	544,000	214,000	1,507,000	3,056,000
July	693,000	..	154,000	554,000	234,000	1,344,000	2,979,000
August ..	528,000	..	153,000	572,000	231,000	1,413,000	2,897,000
September ..	645,000	..	155,000	589,000	240,000	1,509,000	3,138,000

The Alsace-Lorraine figures are included in Germany from 1913 to 1918 (October) and in France from 1919 to date.

The monthly totals for 1924 do not include the production of Germany, there being no figures published for that country.

COPPER STATISTICS.

PRODUCTION:

Yea	Of the World.	Of the United States.	Of Canada.	Of Mexico.	Of Chile.	Of Spain.	Of Germany.	Of Australia.	Of Japan
	Metric Tons.	Metric Tons.	Metric Tons.	Metric Tons.	Metric Tons.	Metric Tons.	Metric Tons.	Metric Tons.	Metric Tons.
189	—	—	3,100	4,400	26,500	52,500	17,900	7,600	15,200
	283,900	130,200	3,600	5,400	20,200	54,700	16,400	7,600	17,200
	315,400	155,000	3,600	7,500	22,900	57,400	17,500	6,600	18,200
	308,400	149,500	5,100	8,700	21,700	54,800	16,400	7,600	18,200
	329,900	162,300	5,100	12,000	21,700	54,900	17,500	9,100	20,400
	339,900	175,100	4,100	11,900	22,400	55,800	16,800	10,200	18,700
	381,300	229,000	3,900	11,400	23,900	54,100	20,400	10,600	20,100
	410,500	224,000	6,000	13,500	24,900	53,800	20,400	17,800	20,800
	437,400	238,900	8,100	10,000	23,600	53,200	20,400	16,300	21,100
	471,800	258,000	6,800	20,000	25,000	53,000	23,800	12,700	25,500
190	494,200	275,000	8,600	22,000	26,000	53,700	10,700	22,400	25,300
	528,600	273,000	18,600	37,000	30,600	54,600	22,000	29,500	27,400
	556,800	299,000	17,800	43,300	26,600	50,600	21,900	25,100	28,300
	593,200	316,600	19,600	49,000	29,900	50,600	21,500	31,400	33,200
	661,900	368,600	19,500	77,800	29,100	47,800	21,300	29,800	35,600
	692,800	395,000	21,600	69,500	29,600	45,500	22,500	35,300	33,700
	725,300	416,200	25,460	60,625	26,200	50,100	20,700	36,250	42,740
	725,000	398,800	26,000	57,500	27,100	50,500	20,800	41,900	49,700
	765,900	430,100	29,000	40,600	38,900	53,400	20,500	40,100	43,700
	850,500	495,800	24,500	57,200	36,400	53,000	22,800	35,000	47,800
112	878,100	492,700	26,100	62,500	35,800	51,100	25,100	41,000	46,700
1	886,800	491,600	25,300	61,900	30,100	51,800	22,400	42,500	55,900
1	1,024,100	563,700	35,300	72,000	37,900	59,900	25,600	47,800	66,600
1	1,002,300	548,600	34,400	51,900	39,400	53,800	25,300	46,600	72,000
1	913,200	515,200	33,200	35,400	38,300	47,500	25,000	33,800	68,000
1	1,094,803	646,212	47,202	30,946	52,081	46,200	25,539	32,512	75,415
1	1,408,280	881,237	47,985	55,128	71,430	42,000	24,796	35,000	81,280
1	1,435,721	872,065	50,526	47,503	83,100	42,000	28,362	38,100	111,256
1	1,395,160	848,203	52,693	75,529	85,580	41,000	15,101	33,838	95,800
1	963,646	548,677	36,106	60,491	63,930	40,000	15,775	16,441	81,865
192	984,483	576,450	35,500	50,480	94,531	25,000	17,255	26,486	65,554
2	529,643	216,295	20,532	12,316	55,721	32,400	16,500	18,932	53,126
2	895,895	264,459	27,073	22,952	128,308	36,500	17,000	12,278	55,663
2	1,280,000	774,000	—	—	—	—	—	—	—
2	1,082,500*	—	—	—	—	—	—	—	—

* Nine Months.

Copper Statistics—*continued.*

PRICES.

Year.	Average London Price. Standard Copper.	Average New York Price. Lake Copper.
	£ s. d.	£ s. d.
1884	53 17 6	64 0 0
5	43 11 0	51 10 0
6	40 1 8	51 0 0
7	46 0 6	52 0 0
8	81 11 3	77 0 0
9	49 14 8	63 10 0
1890	54 5 3	72 15 0
1	51 9 4	59 10 0
2	45 13 2	53 0 0
3	43 15 6	49 10 0
4	40 7 4	43 15 0
5	42 19 7	49 10 0
6	46 18 1	50 17 6
7	49 2 6	52 5 0
8	51 16 7	55 7 6
9	73 13 9	82 0 0
1900	73 12 6	76 3 9
1	66 19 8	76 4 8
2	52 11 5	54 16 8
3	58 3 2	61 17 6
4	59 0 6	59 18 1
5	69 12 0	72 8 1
6	87 8 0	90 9 4
7	87 1 8	95 5 9
8	60 0 6	61 18 2
9	58 17 3	61 10 0
1910	57 2 3	60 2 8
11	56 1 9	58 5 4
12	73 1 2	76 7 6
13	68 5 9	72 12 3
14	59 8 11	62 7 6
15	72 6 3	72 0 0
16	116 1 3	116 0 0
17	125 2 5	123 0 0
18	115 11 6	103 18 10
19	90 19 3	83 17 6
1920	90 12 4	111 6 11
21	69 8 7½	62 10 2
22	62 3 6	69 2 6
23	62 18 0	72 0 0

Copper Statistics—*continued.*

PUBLISHED BY THE LONDON METAL EXCHANGE.

	U.K. Imports for Month. Total.	Shipments for Month to all Destinations.		U.K. Warehouse Deliveries.	U.K. Stocks in Official Warehouse.	Havre Stocks.	Total Stocks.	Price at Date.		
		From U.S.A.	From Other Sources.							
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	£	s.	d.
1922.										
January 31st	5,748	24,679	4,210	1,669	17,266	4,364	21,630	64	0	0
February 28th	3,312	22,910	14,121	1,748	18,996	3,875	20,871	58	15	0
March 31st ..	4,424	35,851	6,494	3,028	15,868	3,459	19,327	57	15	0
April 30th ..	3,489	28,367	7,231	2,829	14,183	3,459	17,642	59	0	0
May 31st ..	1,942	27,894	22,460	2,321	12,992	3,323	16,315	62	15	0
June 30th ..	3,345	29,191	23,032	1,151	12,922	3,192	16,114	62	0	0
July 31st ..	3,839	28,584	9,192	963	13,500	3,552	17,052	64	5	0
August 31st ..	7,025	26,809	15,368	2,156	14,752	4,996	19,748	62	15	0
September 30th	6,199	25,144	10,235	1,222	15,583	5,613	21,196	63	17	6
October 31st ..	5,775	22,681	15,705	775	19,524	4,662	24,146	63	0	0
November 30th	6,134	24,727	10,548	1,458	24,532	3,224	27,756	62	0	0
December 31st	8,372	22,201	18,520	2,155	26,780	3,345	30,125	64	10	0
1923.										
January 31st	5,143	33,409	14,574	1,549	27,268	2,964	30,234	65	10	0
February 28th	8,913	21,643	16,137	1,460	27,632	2,995	30,627	72	7	6
March 31st ..	5,313	28,284	13,374	3,207	26,393	2,515	28,908	75	0	0
April 30th ..	9,271	28,225	18,516	2,649	25,460	2,413	27,873	70	10	0
May 31st ..	7,572	25,911	22,060	1,995	26,536	2,454	28,990	66	10	0
June 30th ..	7,114	27,017	16,955	1,874	27,776	2,309	30,085	65	0	0
July 31st ..	8,011	27,516	13,496	2,402	26,776	2,511	29,287	65	5	0
August 31st ..	10,090	30,458	16,998	1,252	27,674	2,382	30,056	62	15	0
September 30th	6,365	30,970	9,178	1,121	28,453	3,891	32,344	62	5	0
October 31st	11,375	33,021	11,547	680	30,618	1,935	32,553	59	15	0
November 30th	10,506	31,598	28,157	1,977	31,462	1,795	33,257	62	5	0
December 31st	10,987	33,907	18,289	1,128	31,030	1,867	32,897	60	17	6
1924										
January 31st	10,639	31,079	16,333	1,343	30,211	5,889	36,100	61	5	0
February 29th	8,409	39,144	18,413	1,579	29,959	4,182	34,141	66	2	6
March 31st ..	14,474	43,689	13,032	924	30,852	5,281	36,133	64	5	0
April 30th ..	7,613	43,379	26,802	445	33,700	6,380	40,180	63	5	0
May 31st ..	13,572	43,281	14,421	648	34,699	9,520	44,219	61	10	0
June 30th ..	10,811	41,029	21,410	810	36,515	10,225	46,965	61	15	0
July 31st ..	11,218	34,596	16.673	818	37,298	9,176	46,472	63	0	0
August 31st ..	11,465	36,262	21,149	2,205	37,614	9,066	46,680	63	2	6
September 30th	10,947	—	20,453	2,886	37,387	7.885	45.272	62	5	0
October 31st ..	—	—	—	—	38,078	5,832	43,910	63	10	0

TIN STATISTICS.

SUPPLY AND CONSUMPTION OF TIN*.

	Supply. LONG TONS.	*Consumption.* LONG TONS.
December, 1923	9,274	7,617
January, 1924	9,953	7,376
February ,, ...	8,704	11,449
March, ,, ...	8,958	8,139
April, ,, ...	8,628	11,648
May, ,, ...	9,454	8,651
June, ,, ...	9,312	7,199
July, ,, ...	8,260	8,180
August, ,, ...	8,877	7,779
September, ,, ...	7,022	8,219
October ,, ...	7,180	8,535

STOCKS OF TIN*.

	LONG TONS.
December, 1923	18,596
January, 1924	21,173
February, ,, ...	18,428
March, ,, ...	19,247
April, ,, ...	16,227
May, ,, ...	17,030
June, ,, ...	19,143
July, ,, ...	19,223
August ,, ...	20,321
September, ,, ...	19,124
October ,, ...	17,769

STRAITS SHIPMENTS.

	1921. TONS.	1922. TONS.	1923. TONS.	1924. TONS.
January	1,055	5,635	5,960	7,710
February	295	3,560	4,655	6,125
March ..	835	4,935	5,910	6,075
April ..	1,817	5,400	4,430	4,065
May ..	3,650	6,473	4,350	6,575
June ..	1,455	6,465	5,285	5,675
July ..	3,890	4,045	4,855	6,085
August ..	3,480	5,405	4,965	6,575
September	4,760	4,555	6,115	4,565
October	4,645	5,660	6,375	—
November	4,145	6,165	5,372	—
December	6,080	4,605	6,902	—
	36,107	62,903	66,174	53,450 9 months

*Reported by A Strauss & Co., Long tons.

Tin Statistics—*continued.*

WORLD'S PRODUCTION IN LONG TONS (1913-1918 IN METRIC TONS).

Year.	World.	Federated Malay States.	Rest of British Empire.	Dutch Indies.	China.	Bolivia.	Other Countries.
1913	135,710	50,930	20,330	21,240	8,390	26,760	8,060
1914	128,210	49,820	19,950	20,720	7,120	22,360	8,240
1915	129,450	47,520	21,590	20,420	8,000	21,900	10,020
1916	127,250	44,570	21,820	21,240	7,630	21,330	10,660
1917	133,910	40,470	22,080	20,840	11,800	28,320	10,400
1918	130,670	37,970	21,900	20,200	12,000	28,000	10,600
1919	113,635	36,935	15,000	18,500	7,500	27,500	8,200
1920	121,872	34,935	15,100	21,000	11,795	29,542	9,500
1921	106,804	34,490	12,194	12,825	8,295	28,500	10,500
1922	126,178	35,288	8,650	29,000	12,700	30,000	10,540
1923	125,800	37,643	10,090	31,019	8,727	28,682	9,639

PRICES. G. M. TIN.

Year.	Highest.	Lowest.	Year.	Highest.	Lowest.
	£	£		£	£
1883	98½	82½	1904	137	116½
4	87	72½	5	166¼	129¾
5	97	74	6	215	161
6	103½	91¾	7	200	115
7	166	100¾	8	147	118
8	168½	75	9	156	123½
9	98¼	89	1910	176¾	143⅜
1890	105	93	11	233	169
1	93¾	89	12	233	181¾
2	103	89	13	232	166½
3	95¼	74	14	188¼	120
4	77½	61	15	194	148
5	69	59	16	205	161½
6	61¾	56	17	309¾	180¾
7	63½	58½	18	399	235½
8	86	62½	19	344¾	203½
9	150½	87	1920	419½	195
1900	153	108¼	21	210¼	148¼
1	140	98	22	187½	139¼
2	137¼	98	23	240	175¾
3	141½	111½	24	297½	201

Statistics of British Exports of Tinplates and Tinned Sheets.

Exports to	EXPORTS IN TONS DURING TWELVE YEARS.											
	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	1922.	1923.	1924. Nine Months.
Russia	9,921	8,957	2,313	4,947	346	Nil	1,303	1,504	24	377	31	Nil
Norway, Sweden and Denmark	38,138	*a*28,000	*a*38,510	*a*19,158	*a*6,780	*a*4,049	*a*20,164	*a*12,761	5,008	*a*16,862	*a*19,114	*a*24,904
Holland and Germany	77,748	48,675	*e*27,908	*e*21,515	*e*6,571	Nil	*e*16,032 *g*309	*e*21,598 *g*1,874	*e*30,541 *g*234	*e*30,059 *g*18,051	*e*36,239 *g*22,782	*e*27,982 *g*12,321
Belgium and France	34,695	36,523	*f*59,744	*f*63,988	*f*37,877	*f*47,745	*h*8,761 *f*34,357	*h*17,032 *f*60,526	*h*8,078 *f*6,512	*h*19,153 *f*32,119	*h*22,568 *f*38,003	*h*13,236 *f*24,908
Roumania	10,927	17,512	1,181	21	Nil	Nil	2,574	1,004	4,059	7,016	5,270	8,789
Canada	9,889	8,246	2,664	755	1,414	107	500	957	3,126	41,896	27,242	29,734
U.S.A.	21,516	17,468	1,014	838	82	Nil	254	625	862	2,773	9,680	920
South America	39,196	*b*7,789	*b*10,558	*b*8.725	*b*13,880	*b*21,307	*b*5,701	*b*1,148	*b*3,147	*b*17,755	*b*27,023	*b*26,617
India, Hong Kong and Straits Settlements	74,398	*c*70,130	*c*47,588	*c*31,116	*c*28,052 1,911	*c*28,165 6,386	*c*33,760	*c*51,559	*c*40,022	54,731	*c*58,908	*c*31,091
China and Japan	43,791	*d*48,012	*d*29,803	*d*27,982	—	—	*d*20,757	*d*27,076	*d*16,112 *j*21,818	10,202 *j*17,285	*d*29,554 *j*37,648	*d*23,875 *j*19,585
Australia	28,961	31,357	41,483	41,512	17,426	44,288	36,033	47,336	18,295	37,710	42,369	44,577
Other Countries	105,317	111,928	105,982	101,133	63,044	71,462	108,957	108,957	78,644	142,918	174,693	150,275
Total	494,497	435,392	368,778	321,710	177,383	223,509	289,462	353,017	226,482	448,907	551,124	433,814

(*a*) Norway only. (*b*) Argentine Republic only. (*c*) British East Indies only. (*d*) Including Hong Kong.
(*e*) Netherlands only. (*f*) France only. (*g*) Germany only. (*h*) Belgium only. (*j*) Japan.

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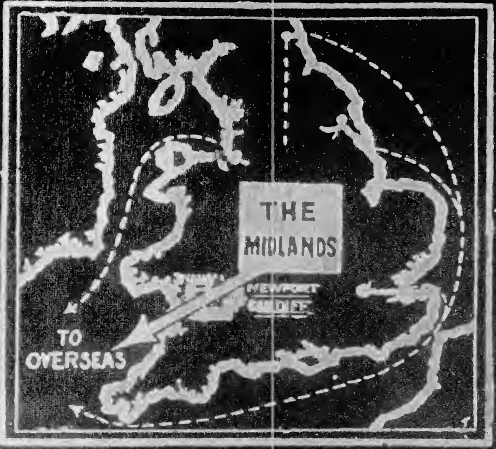

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